University of Alberta

A Client-Directed Communication Program for Aphasic Speakers and Significant Others: Development and Outcomes

by

Sue Favell ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of

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by Sue Favell in partial fulfillment of the requirements for the degree of Master of Science in Speech Language Pathology.

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Abstract

This study was completed to explore the development and outcomes of a communication program for aphasic speakers and significant others. Two married couples participated in the short term program. The purpose of the program was to improve communication efficiency and success within the dyad and to improve participant satisfaction with communication. Outcomes were evaluated quantitatively by analyzing samples of discourse collected before and after the program. Participant perceptions were evaluated qualitatively using a post-program interview. Results for one couple suggested that the program had had a positive impact on communication within the dyad and outside the dyad. Results for another couple indicated that discourse measures showed improvement, but the participants felt that they had not benefited from the program. A complete description of the therapy program is provided. Suggestions for clinical practice and further research are discussed, with particular emphasis on the combination of qualitative and quantitative approaches.

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CHAPTER 1 • INTRODUCTION

The recent influences of pragmatics and family involvement on the assessment and treatment of aphasia have placed significant demands on speech-language pathologists to develop innovative intervention programs and to create new ways of evaluating those programs.

These two thrusts constitute the major components of a drive for functionality in the realm of speech-language pathology. Recognition of this need occurred some time ago as is the case with the development of the Functional Communication Profile (Taylor, 1965) and continues to be relevant today: "Just as the normal language processor operates in concert with its contexts, the damaged language processor must attempt to interact with internal and external contexts in order to achieve communication" (Davis & Wilcox, 1985, p. 25). When one considers context or the use of language, it is necessary to consider those closest to the aphasic client--his family. The family's role has long been recognized as one which contributes significantly to the success of rehabilitation. The family requires support and education in order to cope with the difficulties they and their loved one face (Turnblom & Myers, 1952). Traditional aphasia therapy typically involves some degree of counseling for the family in addition to language intervention with the patient. In a meta-analysis of studies carried out between 1946 and 1988, Whurr, Lorch, and Nye (1992) documented the effectiveness of aphasia treatment. However, change was most often documented in linguistic parameters in these studies, rather than communicative parameters. In addition, the generalization of treatment gains to the natural setting has been questioned (Simmons, 1986; Thompson, 1989; Wambaugh & Thompson, 1989).

This study will focus on the development and evaluation of an intervention program for aphasic clients and their significant others. I have developed a framework for the program based on the recent aphasia treatment literature. The goal of the program is to improve communication within the client-significant other dyad in the natural environment.

CHAPTER 2 • LITERATURE REVIEW

Individuals with aphasia face an extraordinary task: to maintain communication with those around them despite a more or less compromised language system. The ultimate goal of aphasia treatment is to maximize communication for use in the aphasic patient's natural setting. However, the treatment applied has not always resembled the natural setting (Gurland, Chwat, & Wollner, 1982). Prior to the introduction of pragmatics, aphasia assessment and intervention was oriented primarily to the compromised system; the client's task in communication within his or her environment was rarely considered. A natural consequence of the pragmatics approach is the recognition of the patient's family as an important constant in the aphasic individual's environment. The family constitutes the most frequent and usually the most meaningful context for communication.

This review will examine the application of pragmatics to assessment and treatment of aphasia. The impact of aphasia on the family will be discussed with reference to general effects and the specific effects on communication within the family. The redefinition of treatment in terms of the family and pragmatics will be discussed along with the developments in measuring the outcomes of these new interventions. "Family" will be defined broadly and will be used interchangeably with the term "significant other" (SO), defined as anyone with frequent contact with the aphasic individual.

Aphasia and the Family

The family of a stroke survivor must first cope with a life-threatening situation. As survival concerns gradually subside, they are replaced with concerns about the future and then with the residual deficits that become evident in the months following the stroke (Kernich & Robb, 1988). The family system is disrupted by changes in social interaction and activity, role assignments, and employment changes (Bishop, Epstein, Keitner, Miller, & Srinivason, 1986). The communication difficulties are reported to be the most stressful consequence of stroke (Kinsella & Duffy, 1979; Williams and Freer, 1986). Speech-language pathologists have recognized the need to assist the family with aphasia for some time (Turnblom & Myers, 1952).

The spouse of the aphasic patient experiences role change in terms of making decisions related to medical care and finances, assuming a more dominant role in the family, and providing the impaired spouse with personal care (Christensen & Anderson, 1989). Given that the spouses of stroke patients who did not have aphasia reported significantly fewer role changes, the authors concluded "that the inability of these marriage partners to communicate well with each other may serve to make the necessary role adjustments more difficult for the unimpaired spouse" (Christensen & Anderson, 1989, p. 230). Spouses reported lower marital satisfaction following the stroke when compared with pre-morbid status. This was found to be true regardless of the severity of aphasic impairment (Williams, 1993; Williams & Freer, 1986).

The children of aphasic patients reported similar difficulties in coping with communication deficits to those reported by spouses. Adult children reported assuming more responsibilities for their parent, increased irritability and anxiety following interactions with their parent, and a significant alteration of social and vocational aspects of their lives (Chwat, Chapey, Gurland, & Pieras, 1980).

Programs designed to assist families with these issues typically include education (Dzau & Boehme, 1978; Eisner & Kreutzer, 1989; Evans & Held, 1984) and support (Kernich & Robb, 1988; Power, 1989; Turnblom & Myers, 1952). Many of the programs cited were offered to the families of stroke and head-injury patients with several disciplines involved in offering the program as a team.

The second major influence on clinical aphasiology to be considered in this paper--pragmatics --will be discussed in the next section.

Aphasia and Pragmatics

Pragmatics has been defined by Davis and Wilcox (1985) as "the study of the relationship between language behavior and the contexts in which it is used" (p. 1). The contexts of language behavior include the linguistic, paralinguistic, and extralinguistic parameters. The linguistic context can be defined in terms of discourse--the series of sentences surrounding a linguistic unit in conversation, narratives, and in descriptions. The paralinguistic context is the suprasegmental, intonational, and prosodic features of the linguistic unit which serve in communication. The extralinguistic context includes the setting, the purposes, and the participants involved in the interaction (Davis & Wilcox, 1985). This rich dimension of context prompted examination of the traditional, linguistic approach to aphasia assessment and intervention. Pragmatics introduced the *use* of language as an important concept to consider in any assessment and intervention (Davis & Wilcox, 1985). These issues will be discussed relative to aphasia in the following section. In addition, information regarding the pragmatic abilities of aphasic speakers will be summarized.

According to Davis and Wilcox (1985), an assessment of pragmatics in the aphasic client would identify and describe 1) the strengths and weaknesses that the client may bring to the communicative context, and 2) the effect of that profile on communicative success. The latter concern would involve an assessment of compensatory strategies developed by the aphasic speaker (Davis & Wilcox, 1985). For example, an inventory of communication repair strategies and their effectiveness as utilized by the aphasic client would be important. A pragmatic assessment of aphasia would examine competency in linguistic, paralinguistic, and extralinguistic arenas, which includes verbal and nonverbal communication. Various approaches are available from standardized tests to informal observation procedures. The Functional Communication Profile (FCP) developed by Taylor (1965), Communicative Abilities in Daily Living (CADL) developed by Holland (1980), and the Communicative Effectiveness Index (CETI) (Lomas et al., (1989) represent the more formal resources. The FCP provides an estimate of communication abilities in the natural environment through ratings of the aphasic client's performance on a variety of tasks, such as using the telephone and indicating 'yes' and 'no'. Although the FCP reflects the subjective judgment of those in the client's environment, reliability was found to be acceptable (Taylor, 1965). The CADL employs a role-playing approach which uses everyday situations as tasks. The client's responses within each situation are scored based on communicative success in 'getting the message across' (Holland, 1980). The CADL offers the advantages of being standardized with norms available to judge the performance of the client relative to the performance of other groups. Lomas et al. (1989) described the CETI as "a measure of functional communication for the adult with aphasia that could measure change in performance over time" (p. 113). Lomas et al. (1989) discussed the limitations of the FCP and the CADL in terms of psychometric strength (Skenes & McCauley, 1985), sensitivity to change, and other variables. Although all of these measures provide a valuable overall index of communicative abilities, less information is provided in terms of the patient's communicative strengths and limitations (Davis and Wilcox, 1985).

Informal methods of pragmatic assessment in aphasia can generally be placed into one of three categories: rating scales, checklists, and descriptive analysis (Davis & Wilcox, 1985). Yorkston, Beukelman, and Flowers (1980) utilized a rating scale to measure accuracy of information exchanged in a barrier task. The Pragmatic Protocol is an example of the checklist format (Prutting & Kirchner, 1987). The Pragmatic Protocol provides a framework to determine the presence or absence of various communicative acts and whether they were observed to be appropriate in a sample of discourse (Prutting & Kirchner, 1987). Ball, Davies, Duckworth, and Middlehurst (1991) discussed some of the limitations of this type of assessment. Of primary concern was the low interscorer reliability that they found between a speech-language pathologist and a linguist, both specializing in pragmatics. Ball et al. (1991) suggested that "clinician training in pragmatic analysis is essential" (p. 375). These authors also questioned the utility of pragmatic profiles for guiding remediation and they hinted at the need to consider the relative importance of the constructs involved: "If someone scores badly on fluency, is this more or less important than a good score on turn-taking?" (Ball et al., 1991, p. 375). The final category of pragmatic assessment is the descriptive analysis. These measures may address some of the concerns regarding checklist protocols in terms of their potential to delineate what is most important in determining communicative success (Davis and Wilcox, 1985). It typically includes counts of specific behaviors of interest. A descriptive analysis has the potential to consider the interrelationship of both partners in a conversation. The analysis of communication breakdown and repair represents this kind of approach. This type of analysis is based on the assumption that conversation is a cooperative effort with each turn affecting the next. Examples of these analyses designed specifically for aphasia assessment will be discussed in greater detail in the final section of this review as it is this approach that was chosen for measurement in this study.

The first impact of pragmatics in terms of intervention was to prompt examination of clinician-patient interactions in the therapy setting. Davis (1980) described a treatment approach known as PACE (Promoting Aphasics' Communicative Effectiveness), which addressed many of the concerns regarding traditional intervention. PACE incorporates components of natural conversation: equal participation of the clinician and aphasic individual, the exchange of new information to make it more meaningful, use of any modality to convey the message, and natural feedback from the listener regarding message comprehension (Davis, 1980). The client and clinician take turns communicating what they see in a picture that cannot be seen by the listener. The scoring procedure focuses on the efficiency of information exchange. PACE is an example of bringing part of the real world into the therapy setting.

Other forms of therapy have been based on natural conversation, such as discourse therapy (Ulatowska & Chapman, 1989) and communicative therapy (Pulvermuller &

Roth, 1991), for example. Discourse therapy, as described by Ulatowska and Chapman (1989), places primary importance on individual patient needs. The activities should be designed based on those needs and the client's linguistic capabilities (Ulatowska & Chapman, 1989). This particular report suggested the use of narratives in language therapy to improve communicative competence. Ulatowska and Chapman (1989) included linguistic goals within the framework of discourse as in the example of the importance of tense markers in the narrative genre. Communicative therapy is based on the principle that the therapy setting should involve communicative tasks which occur in day-to-day interactions (Pulvermuller & Roth, 1991). The setting, the sequence of interaction, the purposes, and communicative strategies used must be similar to everyday communication. For example, feedback is provided just as it is in day-to-day interactions--on the basis of whether the listener has understood the message (Pulvermuller & Roth, 1991). As with traditional intervention, generalization of communication skills acquired in the therapy setting to the patient's day-to-day interactions continues to be of concern to aphasiologists (Pulvermuller & Roth, 1991; Ulatowska & Chapman, 1989). Related to generalization is the need for appropriate measurement: "ecologically valid therapy studies can be conducted only if the communicative performance outside the clinical environment is used as a database which is evaluated by means of transparent conversational analysis" (Pulvermuller & Roth, 1991, p. 49). The inclusion of significant others (SO) in intervention is important when considering the overall goal of aphasia therapy. However, the pragmatically-based interventions outlined above did not include SOs in the process. Programs which consider pragmatics and include SOs in therapy form the basis of the intervention program developed as part of this study. These will be discussed in greater detail in the "Intervention" portion. In the next section, what is known about the nature of everyday communication for the aphasic speaker will be summarized with particular attention to interaction with familiar communication partners.

Interaction with Familiar Communication Partners

Naturally, the family is an integral part of aphasic clients' everyday interactions. This section will examine what is known about communication in natural contexts between aphasic individuals and their communication partners. The discussion will focus on conversation because it is generally agreed to be the most frequent form of social interaction. A discussion of assessment and intervention within this context will follow.

Within the context of conversation, turn-taking is the structure upon which interaction is built. A communication breakdown occurs when the listener does not understand the speaker's message. This 'misunderstanding' can result from verbal or nonverbal behavior of either communication partner. The analysis of communication breakdown and repair in aphasic individuals and their communication partners provides a useful way to measure the efficiency of information exchange. The connected speech of aphasic speakers tends to be less efficient than that of normal speakers, both in terms of rate and the amount of content provided per time unit (Yorkston & Beukelman (1980). Efficiency was found to be inversely related to severity of aphasia and was not related to type of aphasia (Yorkston & Beukelman, 1980).

The remainder of this discussion will deal with the qualities of aphasic speech which may influence efficiency and success of communication. It appears that some pragmatic capabilities are well preserved in most aphasic speakers, whereas other difficulties are evident for some aphasic speakers. For example, the aphasic patients observed by Ulatowska, Haynes, Hildebrand, and Richardson (1977) demonstrated a range of communicative functions in the speaker role, including polite forms. In the role of listener, the aphasic subjects responded appropriately through indications of attention, such as facial expressions, and use of contingent queries when the message was not understood (Ulatowska et al., 1977). Contrary to the findings of Ulatowska et al., Wambaugh, Thompson, Doyle, and Camarata (1991) found that some of the aphasic speakers in their study demonstrated a restricted range of communicative functions. The discrepancy in these results likely arises from differences in methods and subjects, but it may also reflect differences in data analysis. Ulatowska et al. (1977) provided a summary of group characteristics, whereas Wambaugh et al. (1991) provided data relative to each subject.

Roberts and Wertz (1992) utilized the Pragmatic Protocol (Prutting & Kirchner, 1987) to investigate the abilities of aphasic speakers. They found that 90% of the aphasic subjects were scored as inappropriate in specificity/accuracy at 1 month post-onset. Cohesion, initiation and quantity of turn-taking were found to be inappropriate in 25 -30 % of the subjects. The abilities that were preserved in most subjects were topic selection and initiation, turn-taking repair-revision, and nonverbal functions. These results are very similar to those obtained by Prutting and Kirchner (1987) for aphasic speakers. Roberts and Wertz (1992) noted significant improvement in the verbal aspects of pragmatics in the year following stroke, with the majority of the improvement noted in the first 3 months. Paralinguistic functions showed less impairment initially and less improvement than the linguistic functions (Roberts & Wertz, 1992). Matthews (1987) documented the unique opportunity to compare a taped conversation of a person before the onset of aphasia with a similar conversation after the onset of aphasia. The same situation, topic, and conversational partner were re-created to collect a sample of comparable discourse after the stroke. She found that the patient with fluent aphasia produced significantly more vague or off-topic responses but exhibited little change in the social aspects of conversation from a qualitative point of view (Matthews, 1987). This result, although only representative of one individual, suggests that the aphasic speaker's pre-aphasia communicative style and behavior is important when assessing performance with aphasia. The literature that investigated aphasic speakers' performances with familiar and unfamiliar partners will be discussed next.

Gurland, Chwat, and Wollner (1982) observed the interactions of two aphasic patients in conversation with familiar and unfamiliar partners. They found that each individual exhibited a wide range of conversational acts in terms of extending interaction or the topic. The performance of both subjects was found to be more passive and responsive in conversations with their spouses than when interacting with the clinicians. The subjects' performances did not differ systematically in any other ways. Rather, it appeared that the unique mixture of performance by each member of the dyad resulted in highly individual results (Gurland et al., 1982). In terms of communicative efficiency, Yorkston et al. (1980) found that, contrary to what one might predict, familiar partners were no more successful in gaining information from aphasic speakers than non-familiar partners. Lubinski, Duchan, and Weitzner-Lin (1980) analyzed communication breakdowns and repairs in conversations involving an aphasic subject and her husband as well as interactions between the subject and her clinician. The results indicated that more breakdowns occurred in the spouse interaction; however, further analysis of the conversation with the clinician revealed that many breakdowns were simply "glossed over" by the clinician. It was concluded that the clinician did not consequate potential breakdowns because she was attending to therapy preparations at the same time that she was conversing with the client (Lubinski et al., 1980). The information provided by studies comparing familiar and unfamiliar partners suggests that pragmatic capabilities vary as a function of the communicative partners and the context involved.

The use of compensatory strategies in aphasic speaker-SO dyads is an important consideration in designing assessment and intervention. Aphasic clients have been shown to use compensatory strategies in conversation to assist expression and comprehension (Chwat & Gurland, 1981; Holland, 1982; Marshall & Tompkins, 1982). Marshall and Tompkins (1982) found that their aphasic subjects attempted to self-correct more than 50% of the errors they made. A variety of compensatory strategies have been associated with word retrieval deficits: circumlocution, gestures, semantic association cues, spelling, delay, pointing, and writing (Ferguson, 1992; Holland, 1982; Marshall & Tompkins, 1982). Individuals with Broca's aphasia have demonstrated specific strategies to compensate for agrammatism. For example, the future verb tense may be marked by an adverb rather than an auxiliary verb (Gleason, Goodglass, Green, Ackerman, & Hyde, 1975). Aphasic patients demonstrated use of a variety of contingent queries during a barrier task in which the family member described a picture for the aphasic partner to identify (Linebaugh, Margulies, & Mackisack, 1985). In summary, the aphasic speaker's communicative success in the natural setting is dependent not only upon the nature of the linguistic deficit, but also on the use of communicative strategies.

The non-impaired communication partner in an aphasic speaker-SO dyad has been found to make adjustments as well (Linebaugh, Pryor, & Margulies, 1983; Matthews, 1987; Ulatowska et al., 1977). As with the aphasic partner, reduced efficiency is evident. SOs have been found to use more words in describing a picture to the aphasic partner than when completing the same task with a non-aphasic partner. In addition, more time was used to convey the information to the aphasic partner (Linebaugh, Pryor, & Margulies, 1983). This phenomenon was also evident in a conversational interaction in one investigation (Matthews, 1987). Other adjustments made by non-aphasic partners were to reduce the length of utterances and the rate of speech when talking with aphasic individuals (Linebaugh, Margulies, & Mackisack-Morin, 1985). It appears that the non-aphasic partner accepts increasingly more of the "burden" of the conversation with a decreasing degree of functional communication abilities (Linebaugh, Kryzer, Oden, & Myers, 1982). These authors found that failure of the partner to assume the greater burden resulted in reduced efficiency and they suggested that taking on too much of the burden may also result in reduced efficiency and possibly resentment from the aphasic individual (Linebaugh, Kryzer, Oden, & Myers, 1982).

The communication difficulties that occur for the aphasic client and his family can be summarized as being reduced efficiency of communication (Matthews, 1987; Yorkston et al., 1980) and increased breakdown of communication (Ferguson, 1992; Lubinski et al., 1980). Clearly, intervention designed to improve these difficulties is necessary as part of a comprehensive program for the aphasic client. The next section will discuss intervention programs which target these goals.

Intervention Programs

A pragmatic approach to aphasia assessment and intervention is widely accepted and practiced by speech-language pathologists. The role and needs of the family are also routinely addressed in aphasia assessment and intervention. However, few programs have been documented which attempt to address the behavior of the SO and even fewer have attempted to include both partners in the intervention. For purposes of discussion, the intervention programs reviewed will be divided into two groups: 1) those that attempt to change the environment only, and 2) those that include the aphasic individual *and* the family in the intervention process.

Shulman and Mandel (1988) described a program offered to the friends and relatives of residents of a nursing home setting. The goal of the program was to enhance the quality of visits for the residents and visitors through education regarding normal and impaired communication and to develop problem-solving skills to deal with breakdowns in communication. The program was not limited by type of communication disorder and was intended to address a broad range of needs in communication. The format of the program was three 2-hour workshops followed by small group meetings. The participants were encouraged to actively participate in the discussion components of the workshop. There were 30 participants in the workshops, while the small group sessions included approximately 10 people. The small group aspect of the program was intended to provide participants with assistance more specific to their needs. Prevention of communication breakdown and strategies to improve the quality of communication constituted the bulk of the workshop content. The efficacy of the program was measured with results of a questionnaire completed by the participants. Eighty-six per cent of the participants felt that the program had resulted in improvement in some aspect of their visits with the nursing home residents. A majority of the participants also reported increased knowledge regarding communication and increased use of appropriate strategies during the visits. No data are reported regarding actual changes in behavior, however, the authors recognized that "in future research projects such as this, the attempt might be to observe and record behavioral changes in the interactions between family members and residents" (Shulman & Mandel, 1988, p. 799). This report provided a complete description of the intervention program; however, very little information was provided about the questionnaire used and the criteria for "change" or "improvement" as measured by the questionnaire. Despite the fact that this program was implemented for communication in the institutionalized setting without emphasis on a particular communication disorder, the content of the program is relevant in designing intervention specific to aphasia.

A program that measured actual change in interactive behavior was described by Light, Dattilo, English, Gutierrez, and Hartz (1991). The focus of the study was to train SOs to facilitate communication for non-speaking individuals using augmentative communication devices. The communication deficits in the individuals had resulted from cerebral palsy in one case and traumatic brain injury in the other. An aide, a counselor, and a friend served as facilitators. The training program focused on the use of facilitative strategies within four individual sessions. The facilitator was trained until she used the strategies consistently in interactions with the participant. The majority of the training focused on use of the strategies in the natural setting with the participant. Positive changes in communication patterns, such as greater reciprocity in turn-taking and initiations, were noted following the program. These results were supported by feedback from the participants and by judgments made by observers who were blind to whether tapes were selected from the baseline or post-intervention conditions. It was found that the results were maintained for 2-3 weeks following the intervention. Of relevance in this study was the "rehearsal" of targeted strategies in the natural context to promote carryover.

Simmons, Kearns, and Potechin (1987) outlined an example of family member training to improve communication with an aphasic client. These authors presented a strong argument for specific training for family members in addition to traditional counseling and information-giving. For example, family members are often encouraged to reduce their rate of speech when speaking with the aphasic individual. The traditional approach assumes that the family members will alter their communication behavior, in this case--slow down, after simply being told to do so. In addition, the approach assumes that, if the changes are made, improvement in communication will occur and that the benefits will be long-lasting (Simmons et al., 1987). As is stated in the article, these assumptions are rather tenuous. The design used in this investigation was a multiple baseline across behaviors. The goal of the program was to train the spouse of an aphasic client to recognize and alter disruptive communication behaviors. The behaviors targeted for change were interrupting and excessive use of convergent questions. These behaviors were judged to interfere with communication in the dyad. Interruptions were defined as the wife beginning to talk while her husband was still talking or the wife not giving her husband enough time to respond to her questions. Adequate time was considered to be 20 seconds (Simmons et al., 1987). Recognition training was provided four times weekly. Conversations between the husband and wife were video recorded prior to each session to be used for training. The hypothesis was that the recognition training would prompt the spouse to change the behavior of interest. The training continued until the spouse was able to recognize the target behaviors to a 90% level of agreement with the speech-language pathologist and until the occurrence of the nonfacilitative behavior was 10% or less across two consecutive sessions. The total number of sessions required was 40 (Simmons et al., 1987). The results indicated that the training did result in reduction of disruptive behaviors and that this reduction generalized to spontaneous interactions and was maintained at 1-month follow-up. Most importantly, the differences in communication behavior of the wife resulted in increased verbal responses and number of content words per utterance for the aphasic subject. An interesting finding was that, in the case of convergent questions, the spouse tended to substitute an equally disruptive behavior when attempting to avoid the target behavior. Once she was trained to use a positive alternative, both the targeted and substituted disruptive behaviors were reduced (Simmons et al., 1987).

Newhoff, Bugbee, and Ferreira (1981) described a program modeled after PACE in which a spouse was the client rather than an aphasic individual. The 8-session program involved interaction between the spouse and the clinician in three stages with the following limits on communication abilities: 1) use of non-verbal communication only, 2) simulation of the aphasic individual's communicative abilities, and 3) modified verbalization accompanied by non-verbal modes. Samples of conversation between the husband-wife dyads were collected and analyzed. The results indicated positive results in one measure for two of the four dyads. No significant changes were noted in the group data as a result of the program. The authors speculated that the heterogeneity of the aphasic subjects and the pre-onset communicative style of the dyads had influenced the results of the program (Newhoff et al., 1981).

The difficulty common to all of the above investigations is that they do not consider the input of both members of the communication dyad. Newhoff et al. (1981) stated that "the present study was limited by the choice to study spouses with very little regard for the patient's contributions to the dialogue" (p. 240). Related to this issue, it is not possible to determine which partner behaviors have an impact on the interactions because two or more behaviors are targeted while only one index of change in interaction is presented. An interesting comment made regarding the Simmons et al. (1987) study was that the judgment of behaviors as facilitative or non-facilitative at the outset may not take the context into account. For example, the use of a convergent question may be facilitative in some situations, but not in others. This statement provides further support to considering the interaction, rather than the behavior of one member of the dyad.

Florance (1981) described a model for intervention called Family Interaction Therapy. She proposed a seven stage model integrating the needs of both members of the dyad. Goals were chosen jointly with the speech-language pathologist and the clients based on an initial evaluation. The initial evaluation involved assessing several diagnostic and prognostic factors, including the degree of desire to change behaviors (Florance, 1981). The analysis of a spontaneous conversational sample in terms of communicative success and the Family Interaction Analysis provided the baseline data. Communicative success was defined by the listener's ability to understand the aphasic partner's utterance. The Family Interaction Analysis focused on the SO behavior immediately preceding the aphasic partner's utterance; therefore, it examined the effect of the SO behaviors on the communicative success of the aphasic partner's turn. The categories for the SO behaviors were verbal following, minimal encouragers, closed questions, open questions and verbal cueing. These will be discussed in greater detail in the next section regarding measurement procedures. Florance (1981) suggested that intervention could focus on one partner at a time to change behaviors for optimal communicative success. For example, the data may indicate that the aphasic partner's utterances are less successful and efficient when the SO uses a particular type of utterance. Thus, the training goal would be to use that type of utterance less frequently. However, it was suggested that "in some cases, it may be advisable to train the patient and the SO together, teaching them to note the successfulness of the interaction" (Florance, 1981, p. 210). No data were reported regarding the adequacy of the measures or of the effectiveness of the intervention model. The report included some anecdotes to explain the use of the model, but the thrust of the article was to describe the model. Florance (1981) described the advantages of the model and some of its potential drawbacks that are relevant to this discussion. The main difficulty with this type of intervention was with the invasion of privacy. Part of the assessment and the intervention is recommended to occur in the home, which contributes to the degree of invasiveness. "The Family Interaction approach requires that therapy become superimposed on a dialogue between people, which forces the patient to expose and acknowledge his problem. This direct attack on the communication act could be threatening for some patients" (Florance, 1981, p. 210). The significance of this obstacle would be expected to vary depending on the individuals involved. However, Florance suggested that these barriers must be addressed if the goal of intervention is to help the patient develop adequate communication skills (1981).

One of the advantages of the Family Interaction approach was the inclusion of the clients in the data-taking and goal-determination procedures. The participants were meant to assume responsibility for the intervention program in such ways as developing self-monitoring skills (Florance, 1981). The author speculated that the patient's communicative ability may be emphasized over the communicative deficits through the involvement of the clients in the process. The Family Interaction approach offers consideration of both pragmatics and family considerations in aphasia; however, no data were available regarding the effectiveness of the program in achieving the communicative goals that were set out.

Lyon (1992) described a program called "Communication Partners", in which community volunteers facilitate communication and participation in natural settings for aphasic clients and their primary caregivers, under the direction of a speech-language pathologist. The aphasic client, communication partner, and the caregiver constitute a treatment triad. Unfortunately, the program description focused on the aphasic client and volunteer, so the role of the caregiver is not clear. Lyon (1992) created opportunities within the program for aphasic clients to "select, plan, and undertake activities of their choosing within residential and community settings" (p. 12). He suggested that provision of social and emotional support along with the client-directed component of the program would enhance generalization. No data were available with respect to efficacy of the program (Lyon, 1992).

The investigations reviewed above did show some promising results with reference to changing SO behaviors and improving everyday interactions. The particular components of each study that were suggested to be beneficial included: assessing and training behavior in the setting in which it is desired, including the clients in determining goals, and enabling clients to solve communication difficulties when they occur. However, none of the studies that reported results attempted to effect change in both partners in the dyad. It is important to consider that conversation requires the cooperation of both partners to achieve meaningful and efficient communication. The question of measurement now becomes important. How can interactions be analyzed in such a way as to reflect the behaviors of each communication partner while also providing a measure of total communication success? Are the clients' perceptions of communication success included in the evaluation? These issues will be discussed in the next section.

Measurement of Communication Success

The measures described in this section address the behavior of both participants in the communication dyad and attempt to reflect the reciprocal impact on communicative success. The Family Interaction Analysis (FIA) (Florance, 1981), the analysis of communication breakdown and repair described by Lubinski, Duchan, and Weitzner-Lin

(1980), and the Assessment Protocol of Pragmatic-Linguistic Skills (APPLS) (Gerber & Gurland, 1989) will be discussed in relation to the parameters mentioned. All of the measures use spontaneous conversational samples for analysis.

The FIA involves identifying specific SO behaviors and then scoring the aphasic speaker's response in terms of success. Florance designed the analysis of SO behaviors based on the notion that some behaviors are generally facilitative and some non-facilitative (1981). Five facilitative behaviors were chosen for identification: verbal following, minimal encouragers, closed questions, open questions, and verbal cueing. The success of the aphasic partner's response following any of these SO behaviors was scored relative to the listener's being able to understand. For example, if the SO used a closed question and the aphasic partner's response was not understood by the SO, the response would be scored as unsuccessful. In addition, it would be concluded that, in this case, the use of a closed question was not facilitative. The results would be tallied for 50 of these sequences to determine if any patterns of response were evident. Continuing the example, if the responses to closed questions continued to be unsuccessful, a goal for the SO may be to replace closed questions with another type of response. Thus, behaviors that were classified as facilitative prior to the analysis may be judged as non-facilitative as a result of the analysis (Florance, 1981). This is the first step in evaluating communication breakdown and repair--it provides identification of the breakdowns and successful interchanges. However, it does not examine the dyad's ability to repair breakdowns when they occur.

The analysis described by Lubinski et al. (1980) offers an expanded view of the communication exchange. Communication breakdown was defined as "instances where the ongoing topic was broken or where the flow of conversation was interrupted" (p. 112). It was assumed that the breakdowns would result from the linguistic deficits of the aphasic partner and that repairs would be attempted by either conversational partner. The resolution was classified as "word found", "correction", "topic coordinated", or "unresolved". The difficulties that result in breakdown would be categorized as "lexical," "mispronunciation," "semantic," or "topic shift". Several repair categories were provided from "phonological approximations" to "guesses" (Lubinski et al., 1980). The preliminary use of this framework with one client and her husband revealed that common patterns of interaction occurred. The most prevalent was a hint (provided by the aphasic partner) followed by a guess (from the husband) cycle which continued until the breakdown was resolved. However, the authors did not report the relative effectiveness of the various strategies used.

The APPLS procedure involves a similar framework in terms of classifying responses within the breakdown-repair sequence. It also offers a measure of the frequency and duration of the breakdown-repair sequence (Gerber & Gurland, 1989). As with the other measures, breakdown is defined by the listener's indication of not understanding and is seen as primarily resulting from the linguistic and pragmatic deficits of the aphasic speaker. However, the APPLS does not preclude assignment of the breakdown to the non-impaired partner. The breakdowns are categorized as resulting from linguistic problems (phonological, word retrieval or semantic-syntactic) or pragmatic problems (contextual irrelevance, presuppositional referencing, topic maintenance, topic shift, turn-taking, or other). The attempts made by the client are termed "Revision Attempts," whereas the attempts of the partner are termed "Signals to Repair." Each of these collection of responses could be termed repair attempts because both follow the breakdown and are aimed at repairing the difficulty. The APPLS also involves analysis of successful conversational turns and a framework within which to identify goals for each member of the dyad. A quantitative summary provides a measure of the frequency of breakdowns and the efficiency of the repair (Gerber & Gurland, 1989). Unfortunately, it does not address the "unresolved" repairs as did the analysis of Lubinski et al. (1980). A category for unresolved repairs will be added to the protocol for the current study. Other modifications will be outlined and definitions of the terms used in the APPLS will be provided in the methodology section of this paper. With modifications, the APPLS addresses the interrelation of both partners in the conversational dyad and provides a measure of communicative success and efficiency. The APPLS was chosen as the discourse analysis for this project because it offered a qualitative analysis that addressed the communication behavior of both partners in a communication dyad. It also provided an index of communication efficiency during breakdown in the form of mean length of discourse unit (Gerber & Gurland, 1989). The discourse unit was defined as the breakdown sequence from indication of breakdown to resolution.

Clients' perceptions of change as a result of intervention have been elicited most often using interviews or questionnaires. Generally positive results have been reported by those in the client's environment with reference to the client's abilities. However, little evidence is available that 1) addresses the perceptions of the client as well as the significant other, and 2) focuses on changes in the interaction, rather than changes in the client's abilities only. Shulman and Mandel (1988) documented positive change in the second parameter following an intervention program designed for relatives and friends of elderly nursing home residents. Unfortunately, as was stated earlier in this review, the authors provided little detail regarding the questionnaire that they used to measure client satisfaction. An interview format was thought to address the gaps identified in methods described in the literature for eliciting participant perceptions. In this study, both partners in the dyad were included in the interview process.

CHAPTER 3 • STATEMENT OF PURPOSE

This study was completed to implement recent developments in aphasia intervention and outcome measurement. The intervention programs described in the literature review did not target the communication behavior of *both* the person with aphasia and the significant other. Secondly, objective measures of outcome *and* the impressions of both participants were used to evaluate the program. Previous studies had not included both sources of data. Many of the concepts driving the program in this study had been described in the literature, but had not been put into practice. This project explored the implementation of these concepts.

This study had two purposes. The first was to design and implement a communication training program for aphasic clients and their SOs. The major principle of the program was that it should be tailored to the needs of the clients. Therefore, I developed a framework for the structure and process of the program, but much of the content was determined by the needs of the participants. The recommendations of the literature described in the previous section served as the basis for program development.

The second purpose of this study was to evaluate the impact of the program. Two sources of information were used. A discourse analysis was used to measure change in communication efficiency and success in participants' conversations. The second source of program evaluation data, perceptions of the participants, was elicited through an interview following the program.

Research Questions

1. Did a communication training program result in:

    a. Improved efficiency of communication as measured by the frequency and duration of communication breakdown-repair sequences during conversation before and after the program?

    b. Improved success of communication as measured by the proportion of repaired and total communication breakdowns?

2. What were the participants' perceptions of the effectiveness of the program?

CHAPTER 4 • METHODOLOGY

The case study approach was chosen for this project because it matched the purposes of the study most closely (Yin, 1989). The primary interest was at the level of the dyad rather than the identification of generalizable results. This was an exploratory study because the assessment and treatment concepts under investigation were only recently described in the literature. Qualitative and quantitative methods were combined to evaluate the effectiveness of the intervention program. Quantitative methods were most appropriate for answering the first research question, whereas a qualitative approach was most suited to the second research question.

The debate regarding the utility of each research paradigm extends from differences at the philosophical level to differences in data collection and analysis methods (Guba, 1978). The logical-positivism philosophy underlying quantitative research methodology is contradictory to the phenomenological perspective associated with qualitative research. In the field of program evaluation, Patton (1990) advocates a pragmatic approach. The question is not "whether one has uniformly adhered to prescribed canons of either logical-positivism or phenomenology but whether one has made sensible methods decisions given the purposes of the inquiry, the questions being investigated, and the resources available" (p. 39). The quantitative approach was most suited to measuring the communication behaviors of the participants. The measure was standardized across subjects and it allowed for direct comparison of those behaviors sampled before and after the program. The qualitative approach provided the highly detailed and descriptive data that were necessary for a formative evaluation of the program. Several aspects of this research project were suited to the qualitative approach: the perceptions of the participants were extremely important both for formative and summative program evaluation, the context of the program and the interactions within the program needed to be documented in detail to enhance the reliability of the program, and the client-directed nature of the program demanded that the uniqueness of each case be addressed and documented. The *combination* of the quantitative and qualitative results added another dimension to the interpretation of program effectiveness.

In qualitative inquiry as in quantitative research, the study design must include procedures to ensure that the findings are worthy of attention (Lincoln & Guba, 1985). Trustworthiness is a term from the qualitative paradigm which encompasses several parameters loosely analogous to the terms validity and reliability in the quantitative paradigm (Lincoln & Guba, 1985). The qualitative terms as defined by Lincoln and Guba (1985) include credibility (the "truth value" of the findings), transferability (the inclusion of a detailed description of the contexts and interactions in the study so that *others* can determine if the findings apply to *their own* situation), dependability (documentation of changes in the subject matter and the design), and confirmability (controls for bias in the interpretation of the data.) In the present study for example, preliminary analyses of perceptions were discussed with the participants so that the interpretation could be confirmed as true in their situation. During data analysis, data that did not conform to the emerging themes were acknowledged and accounted for in the analysis. A pilot study was completed prior to implementation of this investigation. The pilot provided me the opportunity to hone my interview skills and to practice strategies for trustworthiness during data analysis. Finally, the qualitative research paradigm demands that the researcher acknowledge and consistently document the presuppositions and beliefs that he or she brings to the research project (Patton, 1990). In my case, there were six assumptions that I brought to this study resulting from professional and personal experience.

- Each client presents with unique needs; no two clients require identical intervention.
- The professional and personal qualities of the SLP affect the clients' progress to some degree.
- Clients with aphasia and those around them require tools and strategies to negotiate the communication world with confidence.
- Alternative modes of expression need to be validated and discussed with aphasic speakers and their families.
- The most important function of communication is to give and receive messages. Once the aphasic speaker's language recovery has plateaued, the task of the client and family is to adjust their expectations about how messages are communicated and to focus on maintaining meaningful communication.
- The participants' perceptions of the program are an extremely important and meaningful source of data.

These assumptions affected the design of the intervention program in this study and had the potential to affect the data collection and analysis phases of the project. Therefore, the research design needed to include strategies to reduce the potential bias and enhance the trustworthiness of the study (Marshall & Rossman, 1989). The central principle of these strategies is that data pertaining to the design, implementation and analysis phases (including the investigator's personal reflections as I have outlined above) be kept in an organized, retrievable form.

Participants

The criteria for inclusion in this study were as follows. The participants with aphasia demonstrated the ability to understand spoken language in a conversational format. They were able to produce single words that were readily intelligible to the listener in a conversational exchange. The participants with aphasia were no less than 6 months post-stroke at the time the program begins. The SO was an individual who lives with the PA and is a close friend or relative of the person with aphasia (PA). Health care providers or other individuals who lived with the PA, but did not maintain a close relationship were not suitable as SO participants in the program. Although it was felt to be ideal if the PA was not currently receiving speech/language intervention, this criterion proved to be unrealistic when accessing participants. The participants were identified on the basis of the described criteria and judgment of the Speech-Language Pathologists at the cooperating institutions. Each referring SLP was advised to consider the following factors in selecting participants: adequate health and stamina, expressed difficulties in day-to-day communication, favorable motivation, and some awareness of communication difficulties.

Two married couples participated in this study. Fictitious names will be used to refer to the participants throughout this document.

Case #1: Bob and Sandra

Bob, age 64, and Sandra, age 66, were married and lived in an apartment. Bob had survived a stroke 13 months previous to the beginning of this study. He was mobile and independent apart from bathing. Bob had received speech and language intervention in a variety of settings. Most recently, he and Sandra attended therapy sessions at a university clinic. At the most recent speech and language assessment, Bob's diagnosis was mild-moderate Wernicke's aphasia. Bob had difficulty understanding general conversation at times, although his most significant difficulty was in understanding abstract concepts and in reading comprehension. Bob's expressive language was fluent with reduced content evident, although he was able to get his messages across for the most part independently in most situations. Bob was working as a taxi cab driver at the time of the stroke. Previously, Bob had been in the military and he had worked as a truck driver for a number of years. He had not worked since the stroke and he had a strong desire to return to some form of work. Bob had completed Grade 10. Sandra was retired at the time of the study. She had formerly worked as a secretary and she had completed high school.

Case #2: Paul and Joan

Joan had survived a stroke nearly three years prior to the beginning of the study. She lived with her husband Paul in an apartment and her adult son lived with them. Joan's most recent speech and language assessment completed 6 months before the study indicated that she had a moderate expressive and receptive aphasia and moderate apraxia. Joan had been receiving speech and language therapy once per week prior to this study. She resumed the regular therapy toward the end of the study. Joan had been working as a property manager at the time of her stroke. She was 58 years of age at the time of the study and Paul was 74 years of age. Paul was retired and had worked as a salesman and a property manager most recently. Joan had reached grade 10 in school whereas Paul had left school after grade 4. Joan's communication profile included significant difficulty producing more than a single word at a time. She often reported knowing exactly what she wanted to say, but that it wouldn't come out right. Occasionally, she used writing quite successfully and gestures less successfully in her attempts to get her messages across. She did not feel comfortable interacting with others without Paul at her side.

All participants were native speakers of English and had no reported hearing difficulties. Sandra had had her hearing tested following the previous treatment and it was found to be within normal limits.

Procedures

Participants' informed consent was obtained prior to beginning the study. Refer to Appendix A to view the consent form. The procedure included the following steps: 1) collection of pre-intervention videotape samples, 2) implementation of the program, 3) collection of post-intervention videotape samples, 4) interviews with each dyad, and 5) analysis of the videotapes. The procedures were implemented in a staggered fashion. I began the program for Bob and Sandra two weeks before I began with Paul and Joan so that Paul and Joan were two sessions 'behind' Bob and Sandra.

Spontaneous interactions between the person with aphasia (PA) and the significant other (SO) were videotaped before and after the intervention program. Three samples of discourse were obtained from each dyad under two conditions: 1) spontaneous conversation with minimal suggestions of topic and 2) a structured activity. The structured activities were designed such that each individual in the dyad had been given independent pertinent information to the task at hand which he or she had to share in order to complete the activity. The videotape samples were collected in the participants' homes. The camera was placed in a visible, but unobtrusive location in the room. I remained in the room to monitor the recording from the video camera. The recording continued until approximately 15 minutes of spontaneous conversation had occurred for each sample.

I implemented the intervention program. I am a certified Speech-Language Pathologist. The program consisted of four sessions. The goals chosen were targeted in highly structured activities initially with a gradual reduction in structure over the sessions toward natural conversation. Building on recognition skills developed in the initial sessions, I provided feedback to each participant regarding his or her performance. A complete description of the program is provided for each case in the Chapter 6.

After the program ended, three post-intervention conversation samples were obtained using the same format as the pre-intervention sampling. Two of the structured activities were new and one was a repetition of a pre-program structured activity. The videotapes were labeled so that the observer completing the analysis was blind to the time of the sample (pre-intervention or post-intervention).

The participants' perceptions of the program and its effectiveness were elicited through an interview using the interview guide method (Patton, 1990). An interview guide is a list of topics or issues to be covered in an interview, but the order of topics to be discussed is flexible. It provides some standardization in data collection, but it allows the interview to remain conversational and specific to each participant (Patton, 1990). Following a pre-amble to explain the purpose of the interview and to encourage the participants to be as frank as possible, I explored the following topics: overall perception of the program, its benefits and drawbacks, the participants' sense of their ability to solve communication difficulties, and the effects of the program on everyday communication (overall satisfaction with communication, frustration levels, degree of control over the situation, the flow of conversation). The interviews were video and audiotaped and I recorded notes to identify important quotations, key terms, and any pertinent information which would not be identified by the audio recording. All interviews were transcribed. Refer to Appendix B to examine the interview protocol more fully.

Data Analysis

The data were analyzed in a descriptive manner, integrating data from qualitative and quantitative sources to evaluate program effectiveness. Of interest was whether the efficiency and effectiveness of the interactions had improved and whether the participants had derived benefit from the program.

Quantitative Data--Discourse Analysis

The videotaped samples of structured activity and conversation were analyzed by an assistant who had no knowledge of when each sample had been collected. Since I was fully aware of when each sample had been collected, the potential for researcher bias had I done the analysis was high. The assistant, a speech-language pathologist, was trained in the coding procedures outlined below. The codes were adapted from the APPLS protocol (Gerber & Gurland, 1989) described earlier. The APPLS provided a way to quantify the interaction in terms of communication breakdown and resolution. The analysis included the following categories for assessment of the communication breakdown and repair sequences:

1. **total number of conversational turns**: a turn was defined as any number of consecutive utterances by a single speaker
2. **total number of breakdowns/misunderstandings** (indicated by turn # and time on the tape): this category was expanded from the APPLS protocol (Gerber & Gurland, 1989) to include the concept of misunderstanding (Humphreys-Jones, 1986) as it represented more closely the difficulties demonstrated by the participants. Therefore a breakdown occurred when the listener had not understood the message *or* the flow of the conversation was interrupted by repetition of old information for the purpose of clarifying the message
3. **total number of breakdowns resolved**: breakdowns were resolved when comprehension occurred or desired word had been produced.

The data from the categories above were used to calculate the following:

1. **percentage of conversational turns in which breakdowns occurred**
2. **Mean Length of Discourse Unit (MLDU)**: the mean number of turns from the point of breakdown to the first successful turn resolving the breakdown (mean length of breakdowns)
3. **repaired breakdowns expressed as a percentage of the total breakdowns**

Effect size (ES), an indication of the significance of the differences, is also provided. Effect size is reported in standard deviation units, so that an ES of 0.50 indicates that a change of half of one standard deviation has occurred from before to after the program.

Qualitative Data--Participant Perceptions

The second source of data, interviews with the participants, was analyzed to answer the second research question. The interview data were analyzed using a content analysis, which involves coding and categorizing responses to describe emerging patterns and themes (Patton, 1990). The content analysis was completed for both cases and potential themes were identified. Then I completed a case study for each dyad by writing a case study narrative (Patton, 1990). The narrative was compiled from the interview data and from field notes. Following that, a process/outcome analysis was completed for each case (Patton, 1990). The processes/outcome analysis demanded a return to the raw data and provided a different viewpoint from which to analyze the data. Results from the content analysis and the process/outcomes matrix were compared within each case. Case themes were those that emerged from both analyses. Finally, cross-case analysis was completed to explore similarities and differences in perceptions for each couple. Program themes described the commonalities across cases. A search for negative cases was completed to ensure that any contradictory data were accounted for in the program themes. The data from the follow-up interview with Paul and Joan was used as triangulation data to confirm or disconfirm the emerging themes.

Reliability

Reliability applied to three components in this study: the transferability of the intervention program, the dependability and confirmability of the interview data, and the reliability of the discourse analysis data.

Program Reliability

To ensure that the program was implemented in a similar fashion across cases, I kept a detailed description of the program as it was carried out. However, it must be emphasized that the client-directed nature of the program necessarily limits its replicability. Therefore the program was only reliable to the extent that its framework (scheduling, time, location), its key principles (client-direction, focus on problem-solving), and the implementation processes (activities of increasing structure, client identification of target behaviors) can be replicated. In addition to the detailed description, the documentation of what occurred in the program (videotapes, field notes) was kept in an organized, retrievable form should more information be required.

Trustworthiness of Interview Data and Analysis

The reliability of interview data was addressed by providing the interview analyses to the participants to verify the completeness and accuracy of the interpretations. Unfortunately, this procedure was incomplete with Bob and Sandra as they were unable to attend a follow-up appointment. However, I documented their perceptions throughout the program and I confirmed those perceptions in the post-program interview. I documented contradictory data and completed a search for negative cases to ensure the credibility of the program themes. As with program documentation, all interview data were preserved for future analysis, if needed.

Reliability of Discourse Analysis

The assistant viewed and analyzed the pre-and post-program videotapes in random order without having knowledge of when the samples were obtained. The primary investigator analyzed a random 20% of the samples to establish inter-rater reliability, whereas the assistant re-analyzed the same proportion of the sample to determine intra-rater reliability. Point-to-point inter-rater reliability between myself and the assistant for the coding procedure was 83%. Intra-rater reliability was 90%.

CHAPTER 6 • RESULTS - PARTICIPANT PERCEPTIONS

Results from both the qualitative and quantitative data will be provided for each couple individually in this section. A complete description of the program and the participants' perceptions of the program components will be presented in a case narrative. Synthesis of results from both cases will be presented in the final section of this chapter.

Case #1: Bob and Sandra

Case Narrative

Bob and Sandra agreed to participate in the program after some discussion whether it would be of any benefit to them. After an initial discussion to introduce the program, Bob expressed that he would like to try anything that might improve his speech. The needs of interest to me involved conversation within the dyad. Sandra felt that they didn't have any trouble communicating and she wondered whether the program was right for them. After having several days to discuss it between them, they decided that they'd like to participate. Sandra agreed to participate in the role of Bob's communication partner. The most recent speech-language service that Bob and Sandra had received was through a university clinic program involving student clinicians. The program was described in a summary report as a family-oriented therapy twice per week. Bob and Sandra's daughter had participated in some of the sessions in the university program. According to Bob and Sandra, the clinicians worked with them individually most of the time. Sandra received support through the program. There were no communication goals for her in the university program, other than to remind Bob to slow down when she was having trouble understanding him.

After explaining the framework of the study and discussing their needs, we began videotaping the pre-program samples. Each videotape session included a structured activity and a conversational sample. The structured activities used in the three pre-program samples included a winter scene barrier activity, a block formation barrier activity and a letter dictation activity. The barrier activities required the speaker to describe something that the listener could not view. The listener had to reproduce the item as indicated by the speaker. The listener had a large closed set of possibilities to guide them in each task. Increased frustration with the barrier tasks was noted for Bob and Sandra. After the first sample was completed, I introduced the concept of breakdown and the need for conversational samples in order to examine instances of breakdown. Sandra understood the concepts, but Bob did not appear to be following what I was saying as he did not respond to me verbally or nonverbally during this discussion. Sandra said that she had enjoyed the conversational component of the first sample. They had discussed topics such as their respective activities outside the home and family trips from the past.

Following the first two videotape sessions, I completed the discourse analysis of the samples and I reviewed the field notes to present my observations in the goal-setting discussion. An example of a communication breakdown in conversation is provided below. Sandra was discussing her ceramics class.

Bob: So are you doing both at once?
Sandra: No.
Bob: So they're separate eh?
Sandra: Well-

Bob: You start one after the first do you?
Sandra: I would like to finish one first and then start the other.
Bob: How do you know if you're doing two once or one one day or one the other day or what?
Sandra: No I think it's better if I complete one thing. Get it completed anyway. Cause there's a lot of work on that.

The original plan was that the participants would be involved in the goal-setting process, but that did not occur. Bob had stated that he wanted practice talking and he wanted to do activities that would challenge his language skills. Sandra had clearly stated that she didn't see any needs within the dyad. Therefore, the nature of the program (dyad focus) did not match with Sandra's needs, and Bob provided a very general definition of needs. The information from the discourse analysis and field notes was the primary source of data for goal-setting. Thus, the goal-setting process was less client-directed than desired.

The goals for Bob and Sandra were chosen to target their interaction following communication breakdown. A pattern of parallel conversation occurred frequently in Bob and Sandra's interactions in which neither of them recognized that there had been a misunderstanding earlier in their discussion. An example of this interaction pattern is provided in Appendix C. I felt that these difficulties could be avoided by having Sandra provide detailed feedback to Bob about what she had and had not understood when a misunderstanding or breakdown occurred. For Bob, he would need to wait and listen to Sandra's feedback before moving on with his conversation. In this way, the misunderstanding would be identified right away and the 'aftermath' of the misunderstanding would be avoided.

When the final pre-program video sample was collected, Sandra mentioned for the first time her discomfort with me observing and writing notes while they completed the activities. "You can't discuss something if you know somebody's writing down everything you say." She felt that she had to "hold back" what she said, especially when they didn't agree with each other. Bob and Sandra had given me feedback at this point that they didn't enjoy the videotaping and sample activities and that they saw many things wrong with the nature of the activities. They felt that the activities did not represent anything that they would actually do in their daily life. "Things that we were discussing in front of you wouldn't be something that we would just normally sit down and discuss." Sandra suggested that they rarely just sit down and talk.

Very early in the program, the emphasis was on 'right' and 'wrong'. These were the actual terms used. I wanted to avoid having that judgment kind of focus, but I first used the term when attempting to explain the goal-setting process to Bob. His comprehension difficulties meant that he needed plain language to understand the abstract process being described. I am not sure if that is how the terms were introduced or whether there was a natural tendency for Bob and Sandra to think in those terms. In the post-program interview, Sandra described the videotape samples in this way: "You were having us discuss a subject . . . to figure out what we were doing wrong." Bob agreed, "we couldn't find very much sense to it that was going to do us any good."

This first therapy session was meant to help Bob and Sandra recognize the behaviors I had discussed with them. I had identified several instances of misunderstanding on the videotape samples. I had intended to explain the first few items to them and then have them identify the instances of misunderstanding and how the goal strategies might help to avoid misunderstandings. However, Bob was having significant difficulty understanding what was being said on the videotape. The metalinguistic component of the activity was too demanding for Bob. We watched the videotapes for close to an hour, which was too long as evident in their body language (leaning back on their couch) and in Bob's comment later about the video watching. "We watched that for what an hour or more? Too much." They didn't understand the purpose in the video watching activity and they didn't enjoy it. I suppose it must have been difficult to watch themselves argue about the misunderstandings. They expressed later that it doesn't do any good to watch for your own mistakes. As Sandra said, "it's human nature. You can find something wrong with somebody else and 'there's nothing wrong with me, I'm normal'." According to Bob, "it's no good to you reading your own mistakes."

In the second therapy session, I modeled the target behaviors in simple tasks to show Bob and Sandra what I was suggesting as goal strategies. In a word association activity, an even pace of interaction was established by having no interruptions and no judgment of whether responses were right or wrong. Sandra reported that it was difficult to "keep my mouth shut" when Bob's responses didn't make sense. The activity shifted to Sandra providing a category name and Bob having to provide an item from the category. After several explanations, Bob was not clear what was expected in the activity. We began the activity so that Bob could learn what was expected by doing the activity. The intent of the activity was to ease Bob and Sandra into the idea of consequating breakdowns without the accompanying argument regarding how the breakdown happened and whose fault it was. After several turns, Sandra began to provide more specific feedback when Bob's responses were not correct. When I asked Sandra what she thought about her performance she noticed that she couldn't maintain the vague feedback for long because of the frustration it caused. She noticed that in this structured activity, she wanted to give Bob more specific information to help him respond accurately. I introduced a sub-goal for Bob at the end of this activity. He rarely looked at Sandra for nonverbal feedback regarding what he had said. Given his difficulty monitoring his own expression, I felt it would be helpful for him to get in the habit of 'reading the listener's face'. In the final activity of session two, Bob and Sandra were required to identify when I was and was not using the strategies. They were consistently correct in identifying target behaviors. Bob and Sandra felt that they "got more out of" the second session than they did with the first session.

The third session began with a sequence story activity designed to 'set the pace' by establishing equal turns. I monitored the interaction (recounting a family holiday) very closely, 'giving' a turn to Sandra at almost every one of Bob's turns as he did not do this without a reminder. I provided general feedback after the interaction and I entered the discussion at a few points to model the goal strategies within the activity. A picture description activity was completed next. I introduced cue posters which served as a written reminder of the goal strategies for Sandra and Bob. I reviewed the goal areas and discussed examples of Bob and Sandra using the strategies in the previous activity. Then I asked them to practice the opposite of the target behaviors in simple turn-taking tasks. This strategy was a form of negative practice. For Sandra, this meant providing vague feedback to Bob regarding the breakdown. I felt that Bob's comprehension level was not sufficient to have him practice the opposite of his target behavior. Neither Bob nor Sandra found this particular activity helpful in learning the target strategies. Bob didn't understand the purpose of the activity. "It's annoying sometimes because the person you're talking to, well in some cases they pretend they don't know what you're talking about and they actually do."

The first activity of the fourth session involved Bob and Sandra providing opinions about given topics. They were instructed to express their own opinion and then ask the other person his or her opinion. During this activity, I gave Bob and Sandra general feedback after each topic. I focused on Sandra paraphrasing what Bob had said to be sure that she had understood and to help him monitor his expression. She was able to do this quite well when given a general prompt. The next activity was a newspaper article description activity. In this activity, Sandra was using the paraphrase strategy without any prompting. She also used a strategy that I hadn't recognized before. When Bob had difficulty understanding a particular concept, she related the concept to a personal experience and Bob understood immediately. I hadn't noticed or wasn't capitalizing on many of the strategies that Sandra used to assist Bob in comprehension. The strategies she used included slowing her speech on occasion and rephrasing what she had said in a different way. She was often very successful in assisting Bob's comprehension.

The final activity of the fourth session was a conversational activity. I joined in the discussion on occasion to model target behaviors when I hadn't understood something. I gave minimal feedback to Bob and Sandra during this activity. Sandra enjoyed the fourth session. "We seemed to do more" and the conversations had a purpose. She and Bob were "not just rattling on for nothing". Bob requested that he keep his cue poster at home as a reminder of the goal strategies throughout the day. He re-iterated his ongoing difficulty remembering what he has learned in between therapy sessions and he felt that having the poster visible in their home would help him. He placed the poster on their fireplace.

The three post-program samples were completed following the therapy program. The structured activities included a repetition of the winter scene barrier activity, a planning activity, and a newspaper article description activity. At that point, Bob and Sandra had concluded that the video samples were "a waste of time" and so completing the post-program samples was not a welcome experience. At times, it appeared that they each just wanted to get through the activity. The result was that many of the potential misunderstandings were 'glossed over' because the intent to consequate misunderstandings was not strong at that point. Bob and Sandra felt that the surprise party planning activity was one of the more 'everyday' activities that was completed in the program, along with discussing newspaper articles, and dictating a return letter to someone. However, Bob and Sandra had suggested that these activities were relatively more 'everyday' than the other activities when they were asked to rate all of the activities for naturalness. They weren't completely satisfied with any of the activities.

After the post-program samples had been completed, I interviewed Bob and Sandra to gain their perceptions of the program and to confirm the feedback they had provided throughout the program. In general, they felt that the program had not benefited them and Sandra re-iterated her belief that the program was not necessary for them. "I don't think it made that much difference. We could communicate before we started this." The activities did not "make sense" to them and the situations were not natural. I completed a preliminary analysis of the interview to prepare for a follow-up interview to confirm some of the trends found in the data. However, the marital difficulties evident from the beginning had seemed to intensify. When I contacted Bob and Sandra to schedule the follow-up interview, Sandra informed me that they had separated and Bob had moved out of their home. Needless to say, I suggested that we cancel the final interview in light of what had happened. This was a very sad and unsettling end to the project for Bob and Sandra. Sandra hinted in the interview that adjustment to aphasia "depends a lot on how your marriage is going, too. If your marriage is doing well then you can work together and adjust to it a lot easier. But when you have these days where it's not working out so hot, you've got problems in your marriage, well you're not going to adjust to this, that's for sure."

Results of Content Analysis and Process/Outcome Analysis

The content analysis was completed as described earlier. I paraphrased each statement in the interview and applied 'tags' to each statement. Tags were key words from the statement. I collapsed the tags into categories. The names of the categories were the codes. The same codes were applied to each case's interview. A list and brief description of each code is provided in Appendix D. I decided to complete a process/outcome analysis (Patton, 1990) to individualize the analysis and to describe the program in the participants' words. The process/outcome analysis is a method of linking data about the activities in the program to the outcomes described by the participants. "This sensitizing notion of 'process' is a way of talking about the common action that cuts across program activities, observed interactions and program content" (Patton, 1990, p. 418). The processes were identified from the verbs the participants used to describe the program activities. Bob and Sandra identified the processes described below as prominent in the program.

- talking/discussing: including conversation, 'just talking'
- guessing/explaining/describing: emphasis on having to get message across and specific activities in the program
- giving opinions: each person having a chance to express their view
- evaluating self: knowing self, learning about self, judgment of self
- researcher in role of evaluator/judge: researcher's judgments of participants, researcher as observer
- videotaping: interacting in front of the video camera
- watching: watching videotapes of interaction samples
- interaction with others: the role of others in communication, potential role of others in the program

A process/outcome matrix is a data organization tool to prepare for inductive analysis. Patton (1990) outlined potential categories for change that might occur in an intervention program. These included 'knowledge', 'attitude', 'behaviors', 'skills', and feelings'. The categories 'behavior' and 'skill' were collapsed into one category for this analysis as it was extremely difficult to differentiate the two with the present data. These categories were cross-referenced with the processes outlined by the participants to form the process/outcome matrix. The process/outcome matrix for Bob and Sandra is provided in Table 1. The reader will note that there were no outcomes that related to change in attitude for Bob or Sandra.

Table 1: Results of Process/Outcome Analysis - Bob and Sandra (Case #1)

	Outcomes			
Processes	Knowledge	Attitude	Behavior/Skill	Feelings
talk/ discuss	Bob and Sandra know what the other thinks about some topics		conversation activities were not natural - topics not of interest and researcher watching; more talking results in speech improvement	Sandra uncomfortable with researcher observing interactions; some of the activities were boring
guess/ explain/ describe			activities that reflected everyday activities and presented a challenge to Bob were most beneficial	
give opinion			voicing opinion was good activity for both	
evaluate self	Bob and Sandra know what they do wrong in their communication			
researcher evaluate	researcher would get more information re communication by just talking with Bob and Sandra rather than watching them interact		the video samples were not natural because the researcher was listening	difficult to talk in front of someone who is writing down notes
videotape	videotaping was not of use to Bob and Sandra, but might have been to researcher		videotaping was a waste of time	videotaping was boring

Table 1: Results of Process/Outcome Analysis - Bob and Sandra (Case #1) (continued)

	Outcomes			
Processes	Knowledge	Attitude	Behavior/Skill	Feelings
watch	watching videos not helpful because they already know what they're doing (However, Bob stated that he *might* notice something by watching himself on tape)		watched videotapes for too long	
interact with others	comparing selves with others might be helpful			

In terms of knowledge outcomes, Bob and Sandra felt that they already knew how they were communicating before the program began. Watching videotapes was not helpful in learning more about how they are communicating, according to Sandra. Bob had agreed that they didn't learn much by watching themselves, but he also stated that watching the videotapes might help him to notice something about his speech. They suggested that interacting with others and watching the videotapes of other couples would be more helpful in learning about communication in general and possibly in recognizing their own communication patterns in others. Sandra suggested that rather than videotaping their conversations, " I think you'd find out specific things more if you just sat down and talked to us."

In terms of feelings outcomes, the most prominent effect of the program was discomfort, especially for Sandra. "The thing I disliked the most about it was you'd have Bob and I discuss the subject regardless of what it was and you wrote down notes and to me that didn't make sense."

Behavior/skill outcome categories constituted the greatest area of impact for Bob and Sandra. The activities that they felt were beneficial were those that matched their everyday lives and that challenged Bob's language ability. Bob felt that the program offered him the opportunity to practice talking, which helps improve his speech. "The strongest thing that might help there again is practice in more talking." Sandra felt that the program "gave Bob a chance to talk more and voice his opinion". Talking and discussing processes were most prominent for Bob and Sandra and it appeared that the topics chosen for discussion were not natural. Sandra's statement that they rarely "just sit down and talk" meant that an emphasis on conversation was not appropriate for Bob and Sandra. They identified 'giving opinions' as a separate process and one that was valuable and enjoyable for both of them. Describing and explaining was also helpful in terms of providing a challenge to Bob. Activities that included a goal for the interaction were seen as more beneficial than just talking about a topic.

The following themes emerged in Bob and Sandra's case. The first is that the program did not match their needs. The activities did not represent their everyday activities--they weren't natural for them. I had not crystallized what was natural for them before the program began. Actually, from the observations and analysis of the interview, it seemed like information regarding everyday needs was more clear for me and for Bob and

Sandra after the program was over. I felt that if I'd had the same conversation with them when we started the program, the program might have addressed their needs. Their needs as a couple were minimal. "A lot of this would be better if you just worked with him," according to Sandra. She didn't see any potential value for herself in the program. She felt that her needs had been met in the previous program at the university clinic. Sandra and the student clinicians "just talked about how I was coping and how things went at home". Related to the issue of matching needs with processes was the emphasis in the content analysis on 'purpose'. Bob and Sandra frequently reported that they didn't see the purpose in the activities, especially the videotape samples.

There seemed to be an emphasis on emotional difficulties surrounding communication for Bob and Sandra. Sandra felt that the program hadn't changed the fact that "if you can't get your message across you're liable to get in an argument . . . and no amount of courses is gonna change that because that's human nature." When Bob and Sandra can't agree about something, "it's like a tug of war", they have a hard time convincing the other of their position. Much of what Bob and Sandra discussed in the post-program interview and throughout the program did not relate specifically to the program, but to adjustment in general. Their marriage separation was the final indicator that they were dealing with problems that were much larger than adapting to Bob's aphasia.

Another theme was privacy/self-reliance. They felt that they should learn to adjust to the communication problem on their own. "I think nobody can tell you about how to adjust. You've got to do that yourself. There's a lot about this that you've got to figure out yourself," according to Sandra. Bob and Sandra felt that they already knew how they were communicating, "we know what's gone wrong or what's not fitting into place. The videotape isn't gonna show us something we hadn't already figured out." I was seen as invading their privacy by observing. They would have preferred that I participate in their interactions, rather than judging their interactions. "Somebody who's sitting at the university and we come down there twice a week, they can't tell us how to adjust to each other. That's something we've got to do. And that's personality between the two of us too," Sandra explained.

The privacy/self-reliance theme was woven into the idea that the role of others was important to Bob and Sandra. They wanted to compare their performance with that of others. They reported that the frustration level between them was reduced when Bob was able to get out and see other people. Bob said that "it changes your understanding speaking to other people," and Sandra felt that "it helped a lot when he started getting out." Therefore, the dyad focus was not really important to Bob and Sandra. Again, there was a mismatch between the purpose of the program and the needs of the participants.

Case #2: Paul and Joan

Case Narrative

Paul and Joan agreed to participate in the study following a brief description of the program and a face-to-face meeting. A speech language pathologist had referred them for the program. They felt satisfied with their communication and discussed the difficulties Joan had in talking with others, especially if Paul is not with her. Joan said that she doesn't like to go out without Paul. She feels nervous about talking with people when Paul is not around. They enjoyed going to Bingo and family gatherings. They had a summer home which was extremely important to them. Joan was manager of the resort where their summer home is located when she had her stroke. Paul had been a property caretaker as well as a salesman, but he had been retired for a number of years.

Paul and Joan wondered if there might be something I noticed in their interaction that would improve it, although they felt comfortable in how they communicated at the time. They seemed to embrace right from the beginning that this was a program for both of them to work together on, rather than a program for Joan only. Paul had been involved as an observer and sometimes participated in Joan's previous therapy. He talked about the improvement that Joan had made since her stroke in both speech and mobility. The extended family was supportive of Joan's efforts and both she and Paul were proud of her sustained hard work to make the progress she had.

Joan agreed that she had made progress but she wasn't satisfied with her present speech ability. Joan had been receiving regular speech therapy prior to the program, but she did not receive regular therapy again until toward the end of the program. The goal in regular therapy was to increase Joan's use of alternate modes of communication since the potential for improvement in the verbal ability area was thought to be low. However, some rote practice and word generation activities were provide as homework for Joan including a reading and writing component. Joan was proud of her homework efforts. The greatest difficulty that Joan expressed to me in the pre-program interview was that she frequently couldn't retrieve the names of family members. Often, Paul would supply the names for her, but she wanted to be able to retrieve them herself.

The pre-program samples were completed as they were for Bob and Sandra. Joan and Paul enjoyed the activities because they presented a challenge for Joan, a way for her to improve her speech. Joan enjoyed the challenge of barrier activities and Paul often wanted to continue the activity or made suggestions for altering the activity. Paul continued to comment positively about how well Joan was doing throughout the pre-program samples. There was indication of frustration on Paul's part on only one occasion during the block formation activity. In that case, Paul wanted Joan to use a particular approach to the activity and she disagreed. The conversational components of the pre-program samples began with a participant-selected topic and then I provided another topic to complete the sample length required. The topics chosen by Paul and Joan included the O.J. Simpson trial and their plans for the summer.

In the preliminary analysis of the samples, it was evident that Joan used a restricted repertoire of communication behaviors. When she was unable to retrieve a word or get her message across, she repeated her attempts to retrieve the word and did not use gesture or writing cues, which had been found to be successful in the past. In the regular therapy, Joan used alternatives when cued, but not spontaneously. Paul often tried to provide Joan with the word she needed or guess at the message she was trying to get across. An example of a communication breakdown is provided below. Paul and Joan were discussing Quebec separation in this excerpt.

Paul: And I don't like to see them uh vote. I don't like to see them vote for a <referendum>.
Joan: <Ya I know>.
Paul: You know-
Joan: I see uh <I I'll see>. One minute, one minute, one minute. Paper. Paper. A right an a-
Paul: <I don't think they'll get it Joyce.> Born in Quebec.
Joan: Ya, one minute, one minute. Aw right an um uh I see um is uh I live uh Can I live uh bec oh <bec>-
Paul: <You live> in Quebec ya. You were born in <Quebec>.
Joan: <Born> uh born uh an a um bec.
Paul: Born in Quebec.
Joan: Okay.
Paul: Ya
Joan: An aw right, aw right paper.
Paul: Oh you are going a <paper>?
Joan: <You see> I know I did.
Paul: Oh you <did>?
Joan: I did.
Paul: You don't want them to separate.
Joan: Yes I do.
Paul: You don't want <them> you don't want them to separate.
Joan: <Yes> uh I'm I'm separate.
Paul: You are mad about that aren't you?

It was evident that Paul would need to give Joan more time to attempt any alternative communication strategies. Paul tended to carry the greater burden of communication than Joan did. It was obvious that, given the severity of Joan's expressive deficit, an equal share of conversational burden was not appropriate for a goal. However, it appeared that Joan had the potential to carry more of the burden and determine the direction of interactions and therefore be more independent in her interactions with others.

These needs were discussed with Paul and Joan and they agreed to go ahead with the program with the goals as follows. Joan would work on using a hierarchy of communication strategies when she is unable to get her message across which included providing verbal associations to the word she was attempting to retrieve. Successive strategies in the hierarchy were writing and gestures. Joan was reluctant at first to try and accept an increased communicative burden, but she felt she would try it with encouragement from Paul. Paul was agreeable to his goal of waiting longer for Joan to respond while she attempted the alternative communication strategies.

The therapy program procedures were similar to the program for Bob and Sandra in terms of structure and type of activities. However, I incorporated the family names into some of the activities as content as well as the summer home topic. The videotape samples were viewed to establish recognition of goal behavior in interactions during misunderstandings. Paul and Joan enjoyed the videotapes. Joan often remarked about what she was trying to express and she seemed to see the reviewing as a second opportunity to try and get the words out. She often did retrieve the words while watching herself on the videotape. It was difficult to get Joan to focus on the task of identifying when she was using a limited repertoire to get her message across. Perhaps the metalinguistic nature of the activity was out of Joan's range of abilities. Paul demonstrated ability to analyze his own performance. In the discussion involving family names where he was naming them for Joan, he recognized that "she wanted to say it herself." He also provided encouragement during the video viewing, identifying Joan's use of alternatives to get her message across: "you were giving me a hint about what you were talking about." Joan and Paul appeared to view the videotapes as a record, an indicator of Joan's progress and current abilities. Paul explained that "it helps to see how you talk" and "Joan could see how she was speaking." I provided feedback to both Paul and Joan after we viewed each misunderstanding. Then clips of video samples were played for Paul and Joan to provide feedback on their own performance. Paul was able to generate some ideas when prompted each time, but Joan responded only by attempting the words she was having trouble retrieving in the videotape.

The second therapy session involved a word association activity in which turns would be equal and Paul would be required to wait for Joan's response. However, Paul required frequent reminders to let Joan have a chance for her turn. Family names were incorporated into this activity. Feedback was provided to each of them following an interaction sequence. In the feedback to Joan, she was encouraged to use alternative words if she had difficulty retrieving a particular word. I gave her an example from the activity and she repeated the word she had been trying to retrieve in the example. It was not clear from her response that she comprehended the concept of identifying target behaviors. Again, comprehension difficulties made full participation problematic for the person with aphasia.

In the next activity I reviewed target behaviors and modeled the behaviors in a three-way interaction with Paul and Joan. Joan appeared to have difficulty understanding what would happen in the activity, so I demonstrated the activity. Both participants were able to identify accurately the presence and absence of target behavior in my models. The cue poster remained in full view of each participant and I pointed to the poster as a reminder when Paul and Joan were not applying target strategies. Joan used an increased amount of writing and gestures when Paul and I cued her during this session. Paul and Joan enjoyed session two because it provided an opportunity to practice talking, especially in attempting the family names, according to Joan. Paul reported that the session was helpful in practicing waiting.

In the third session, the cue poster was also used as a visual reminder of target strategies. A story sequence activity was completed first to establish the turn taking and review goal areas. This activity easily turned into an unstructured conversation and resulted in Paul carrying the burden of the conversation once again. I discussed what I had observed and Paul agreed with my analysis of what had occurred. A picture description activity was used to practice purposeful absence and presence of target strategies for Paul only. I felt that Joan would have significant difficulty understanding the nature of the activity, given the metalinguistic demand. Paul remarked that the activity was helpful in learning how to wait for Joan to respond in the interaction. A problem solving activity was completed to attempt to expand the use of target strategies to successively more 'everyday' activities. The explanation of the activity was kept brief since Joan would more likely be able to understand what was expected by actually attempting the activity. However, Joan had some difficulty understanding the hypothetical nature of the problems being discussed. Paul reported that it was harder to use his 'wait' strategy in this activity and there were more occasions when the cue poster reminder was used during this activity. A conversational probe at the end of session three revealed that Paul and Joan were using the target strategies consistently without cues during conversation.

By the time the fourth session had begun, Paul was extremely pleased with the program and he had observed far-reaching benefits to Joan's independence in the community. Joan was proud of being able to do the banking on her own now. The activities in session four were completed to provide closely monitored practice of target strategies in less structured situations. The activities in session four included expressing opinions about given topics, describing newspaper articles, and discussing favorite places that they have lived. Reminders were provided by pointing to the cue posters when necessary. Paul liked the session because "we've talked more now than in the past twenty-four hours." Joan stated that she still gets frustrated but she liked to be pressured to persist in getting her own message across. She stated that she simply likes talking with Paul. Joan had resumed her regular therapy at this final therapy session. She was pleased with the improvement she had made since her last regular therapy session. The goal of this round of regular therapy was on specific phoneme production.

The post program samples were completed as they were for Bob and Sandra, except that different topics applicable to Paul and Joan were used for the conversational samples. For the activity that had been repeated from the pre-program samples, Paul and Joan felt that it was easier the second time because "we knew what we were doing." Paul also suggested that what they had learned through the program had helped them do the task better the second time. Paul described Joan's progress in this way: "she explains herself much better since she has taken this course with you." The post-program interview was completed after the final videotape sample was collected. The follow-up interview took place after preliminary analysis of the post-program interview had been completed.

Joan and Paul were very happy with the program. The benefits for them included learning, enjoyment, and improvements in Joan's independent functioning. Paul mentioned that having to sit down and talk about "just anything" was difficult for the video samples. Joan would have liked to have done activities from her everyday life that she finds challenging, such as a cribbage game.

Results of Content Analysis and Process/Outcome Analysis

The processes identified by Paul and Joan are described below.

- expressing: Joan getting her messages across
- explaining: Joan persisting when communication breakdowns occur to express her ideas
- learning: learning about self, learning new skills
- watching: watching the videotape samples
- games: the structured activities in the samples and the therapy sessions
- videotaping: making a record of interactions for watching later
- practicing: practicing talking, using alternative modes of communication
- guessing: Paul trying to understand the message Joan was sending
- trying: completing challenging activities for Joan

The process/outcome matrix for Paul and Joan is displayed in Table 2.

Table 2. Results of Process/Outcome Analysis - Paul and Joan (Case #2)

	Outcomes			
Processes	Knowledge	Attitude	Behavior/Skill	Feelings
express	knowledge increased by challenging tasks	program helped Joan to not give up when trying to express herself	increased talking and expressing ideas by herself	Joan not afraid to communicate with others now; Paul not comfortable with 'just talking'
explain	seeing herself explaining on videotape was good for Joan	Paul will encourage Joan to continue explaining her own ideas	Joan explained situations independently to doctor and others	
learn	Paul and Joan learned a lot from the program especially by watching videos	the program helped Joan to be more outgoing (However, Joan reportedly not shy to begin with)	Paul learned to wait for Joan to respond on her own before trying to help her	
watch	watching videos was the most prominent part of program for Joan			Joan enjoyed watching video samples
games	the activities that were challenging were helpful for Joan's speech			Joan enjoyed the challenge of the activities
video				Joan liked being videotaped because that meant she could watch how she was talking
practice			the more practice talking, the more Joan's speech will improve	

Table 2. Results of Process/Outcome Analysis - Paul and Joan (Case #2) (continued)

	Outcomes			
Processes	Knowledge	Attitude	Behavior/Skill	Feelings
guess	guessing activities keep the mind active		Paul and Joan guessed well in the post-program barrier activities	
try		program helped Joan to try harder to get her messages across		

The emphasis of the program for Paul and Joan was on expressing and explaining. For Paul, learning was also prominent. He felt that he had learned about Joan's current communication ability. Outcomes for knowledge centered around the videotape viewing activity. Both Paul and Joan felt they had learned a lot about how they communicate by watching the videotape samples. When I asked Joan what she would tell another stroke survivor about the program, she said "picture" and pointed to the video camera.

A major outcome for Paul and Joan related to behaviors and skills. Paul had learned how to wait and give Joan time to respond and express her own idea. Joan had become more independent in the community. Paul reported that "it's only since you started this here that we've started to go to the bank and shopping." Joan pointed to herself and said "banking . . . not Paul . . . my God!" According to Paul, Joan "explained what happened with her little stroke to the doctor, she didn't need my help. She couldn't do that before." Paul also noticed that Joan was talking more and was expressing herself better in daily interactions with him. "Joan is doing a lot more talking and a lot more hand signals and writing and doing things in order to explain what she's saying." Joan felt that she had made improvement in talking, but she seemed to feel that she still needed Paul's help to find words on occasion. Joan believed that the challenging activities were the most helpful in improving her speech. She would have liked to see more of those activities in the program.

There seemed to be some program impact in the attitude domain for Paul and Joan. Paul reported encouraging Joan to explain herself to others rather than depending on him to talk for her. "I like her to express herself as much as she can without me helping her." For Joan, she seemed to have gained some confidence in her communication ability with others and she no longer gave up as easily when she couldn't get her message across. "Before we took this, she used to say she's trying to think of something and if she can't say she used to say 'never mind'. But now she expresses herself more." There was some contradiction in the data regarding Joan's shyness. Paul suggested that the program brought Joan out of her shell and yet they had both said that Joan has never been shy. In the follow-up interview, I brought the contradiction to their attention. Paul responded by suggesting that Joan formerly did not persist in expressing herself with others if they couldn't understand her, but now she is not afraid to persist with others.

Outcomes in the feelings domain included less fear for Joan in communicating with others. She described her frustration with communication problems before the program--"I cry"--and as a result of the program she was "you see not . . . not afraid". Both Paul and Joan reported enjoying the activities of the program, especially the structured activities and watching the videotape samples. Paul commented that he felt uncomfortable having to "just sit down and carry on a conversation without knowing what we're gonna talk about" for the videotape samples.

The themes crossing categories in the content analysis and the process/outcome analysis for Paul and Joan included increased independence for Joan in the community and in dyad interactions. Also, Joan and Paul shared a belief that practicing challenging activities from everyday life was the most powerful way to improve speech. The emphasis in the program was on expressing and explaining, which were the needs identified by Paul and Joan before the program began. Therefore the needs, program processes and the outcomes were closely matched for Paul and Joan. It was important to Joan and Paul for Joan to express herself independently. What was perhaps the most interesting about these results is the 'spillover' of benefit to Joan's interactions outside the dyad. It is clear that Paul saw himself as a cheerleader for Joan in this regard, encouraging and sometimes insisting that Joan attempt to get her messages across to others without his help. "If I'm not there, she has to do her own talking without my help and she does it." "When we go to Bingo now I don't get her pop for her. I get her to go and do it herself." Paul suggested that a big part of the program should be talking to others outside the dyad, "then Joan is motivated to try much much harder to get her message across." Their relationship was the vehicle through which Joan's confidence and ability developed to communicate with others. Perhaps the reason for this was that Paul was present in many of the community settings that Joan was re-discovering.

Results of Cross-Case Analysis

The most prominent contrast between the two cases is that the program matched the needs of Paul and Joan and the program did not match the needs of Bob and Sandra. The outcomes were very different. Bob and Sandra didn't learn anything about themselves because they felt they already knew how they communicated. Paul and Joan felt that they had learned about how they were communicating. Sandra expressed discomfort with many of the activities and Bob was frustrated at times because he didn't see the sense in some of the activities. Paul and Joan reported enjoying all the activities, although Paul mentioned some difficulty with having a conversation without knowing what they were going to talk about. Paul achieved his goal in learning to give Joan time to express herself and Joan benefited in confidence and in her ability to communicate independently in the dyad and in the community.

All the participants shared the belief that the key to improving speech was to practice talking in challenging 'everyday' activities. The program differed for the couples in the degree to which the activities did match their communication lives. A better match occurred for Paul and Joan than for Bob and Sandra. For example, Joan is often in situations with Paul and others where she has to explain something. They perceived explaining as one of the most prominent processes of the program. Perhaps it was the match between everyday processes and program processes that resulted in success for Paul and Joan. Bob and Sandra identified conversation and discussion as the most prominent process of the program. Those processes did not fit with their daily communication processes and the program was not successful according to them. Interestingly, the strong emphasis for Bob and Sandra on my role as observer was not present in the content analysis for Paul and Joan. Paul and Joan did not refer to my role in the program, other than as a helper.

An interesting paradox in the themes of the two couples was the relationship between the intent of the program and the outcomes. The program focused on communication within the dyad. However, in both cases, the participants had identified needs for communication outside the dyad. For Paul and Joan, those needs were met even though it was not a direct focus in the program. For Bob and Sandra, those needs were not met. Perhaps Paul's presence in Joan's community activities and his active role in those settings encouraging her to communicate independently are the reasons for the outcome. In Bob and Sandra's case, they participated in separate activities in the community. Bob attended a day program at a hospital on some days and he enjoyed walking around the shopping mall. Sandra attended craft classes and activities at the seniors' centre. Apart from visiting with family, it appeared that they did not do any joint activities outside the home. Again, the program did not match Bob and Sandra's communication lives.

CHAPTER 7 • RESULTS - DISCOURSE ANALYSIS

The quantitative data from the adapted APPLS (Gerber & Gurland, 1989) analysis of the pre- and post-program interaction samples are summarized in this chapter. The number and length of breakdowns are reported in terms of the percentage of turns in which breakdown occurred. This was considered a measure of the efficiency of the interaction. The percentage of breakdowns that were resolved is a measure of communication success. These data are presented for the structured activity and conversation conditions. The results from the structured activity condition for Bob and Sandra are shown in Table 3 and the results from the conversation condition are presented in Table 4.

Table 3. Structured Activity Samples - Bob and Sandra

	Pre #1	Pre #2	Pre #3	Mean Pre-Program	Post #1	Post #2	Post #3	Mean Post-Program
# of turns	160	88	62	**103** s.d. = 50.77	146	113	92	**117** s.d. = 27.22
# of breakdowns	15	9	9	**11** s.d. = 3.46	7	6	2	**5** s.d. = 2.65
% turns in which breakdown occurred	55	69	81	**68** s.d. = 13.04	24	37	22	**28** s.d. = 8.12
% breakdowns resolved	93	66	100	**86** s.d. = 17.96	100	100	50	**83** s.d. = 28.87
mean length of breakdowns (MLB)[a]	5.87	6.8	5.56	**6.1** s.d. = 0.65	5.0	7.0	6.0	**6.0** s.d. = 1.0

[a] Equivalent to APPLS mean length of discourse unit (MLDU) (Gerber & Gurland, 1989)

Note. The structured activities completed in each sample were as follows:

Pre #1: Winter scene barrier activity
Pre #2: Block formation barrier activity
Pre #3: Letter dictation
Post #1: Winter scene barrier activity
Post #2: Newspaper article description
Post #3: Party planning

Table 4. Conversation Samples - Bob and Sandra

	Pre #1	Pre #2	Pre #3	Mean Pre-Program	Post #1	Post #2	Post #3	Mean Post-Program
# of turns	131	146	266	**181** s.d. = 73.99	183	240	125	**183** s.d. = 57.50
# of breakdowns	2	4	12	**6** s.d. = 5.29	4	8	5	**6** s.d. = 2.08
% turns in which breakdown occurred	5	16	28	**16** s.d. =11.51	8	11	32	**17** s.d. = 13.08
% breakdowns resolved	100	75	92	**89** s.d. = 12.77	75	50	100	**75** s.d. = 25.0
mean length of breakdowns (MLB)	3.0	5.75	6.25	**5.0** s.d. = 1.75	3.75	3.4	8.0	**5.05** s.d. = 2.56

In the structured condition, positive change was evident in the number of breakdowns and the proportion of the interaction spent in breakdowns. Pre-program sample #1 and post-program sample #1 involved the same activity. Therefore, a direct comparison can be made between these results. A large decrease in breakdown percentage is evident and a slight difference in resolutions occurred. Virtually no change was seen in the conversation condition for the breakdown measures. The data for resolved breakdowns indicated that fewer breakdowns were resolved in the post-program samples in the conversation condition. Very little change was seen in the length of breakdowns for either conditions.

Paul and Joan's results are presented in Tables 5 and 6 for the structured and conversation conditions respectively.

Table 5. Structured Activity Samples - Paul and Joan

	Pre #1	Pre #2	Pre #3	Mean Pre-Program	Post #1	Post #2	Post #3	Mean Post-Program
# of turns	140	257	164	**187** s.d. = 61.80	178	117	156	**150** s.d. = 30.89
# of breakdowns	7	19	7	**11** s.d. = 6.93	9	4	2	**5** s.d. = 3.61
% turns in which breakdown occurred	39	49	54	**47** s.d. = 9.92	43	20	6	**23** s.d. = 18.68
% breakdowns resolved	86	89	71	**82** s.d. = 9.64	100	100	100	**100** s.d. = 0
mean length of breakdowns (MLB)	7.86	6.58	12.71	**9.05** s.d. = 3.23	8.56	5.75	4.5	**6.27** s.d. = 2.07

Note. The structured activities completed in each sample were as follows:
Pre #1: Winter scene barrier activity
Pre #2: Block formation barrier activity
Pre #3: Letter dictation
Post #1: Winter scene barrier activity
Post #2: Newspaper article description
Post #3: Party planning

Table 6. Conversation Samples - Paul and Joan

	Pre #1	Pre #2	Pre #3	Mean Pre-Program	Post #1	Post #2	Post #3	Mean Post-Program
# of turns	315	284	288	**246** s.d. = 16.86	373	185	290	**263** s.d. = 94.21
# of breakdowns	14	8	13	**12** s.d. = 3.21	14	12	9	**12** s.d. = 2.52
% turns in which breakdown occurred	37	24	37	**33** s.d. = 7.52	22	39	22	**28** s.d. = 9.82
% breakdowns resolved	93	100	85	**93** s.d. = 7.52	100	83	100	**94** s.d. = 9.82
mean length of breakdowns (MLB)	8.21	8.5	8.23	**8.31** s.d. = 0.16	5.86	6.08	7.22	**6.38** s.d. = 1.03

The results for the structured activity condition indicated a positive change in breakdown percentage and proportion of breakdown turns to total turns. Again, comparison of pre-program sample #1 and post-program sample #1 can be made. In this case, very little change in breakdown percentage occurred. A slight increase in proportion of breakdowns that were resolved was evident in the structured activity data. The mean length of breakdowns decreased for Paul and Joan in the structured activities. The data for conversation samples indicated a slight decrease in breakdown percentage and a decrease in the mean length of breakdowns. A visual representation of the results is presented in Figure 1. The error bars represent the standard deviations for each mean.

Effect sizes are summarized in Table 7. According to Cohen's (1977) guidelines, an ES of 0.20-0.50 is considered small; an ES of 0.50-0.80 is considered medium and an ES greater than 0.80 is considered large. The differences for the structured activity condition are extremely large, whereas the conversation results indicated more moderate changes in both cases. It is important to note that the high ES evident for Bob and Sandra in percent resolution for the conversation condition indicates a *decrease* in resolutions from pre-program to post-program.

Table 7. Effect sizes by case and condition for breakdown percentage, percentage of breakdowns resolved, and mean length of breakdowns (MLB).

Condition	**Measure**	Bob and Sandra	Paul and Joan
Structured			
	% breakdown	3.68	1.61
	% resolved	0.12	3.73
	MLB	0.10	1.05
Conversation			
	% breakdown	0.08	0.58
	% resolved	0.75	0.12
	MLB	0.02	3.2

Improved efficiency of communication in structured activities was evident for both couples. However, in conversation, Paul and Joan's data suggested a medium effect and little effect was evident for Bob and Sandra. Communication success as measured by the proportion of breakdowns that were resolved improved for Paul and Joan dramatically in the structured activities, but little change occurred in the conversation condition. The length of breakdowns decreased in Paul and Joan's interactions for both conditions. In summary, a large positive effect occurred for Bob and Sandra in breakdown percentage for the structured condition. No other effects were noted. For Paul and Joan, large effects occurred for most of the measures. A medium effect occurred in breakdown percentage in conversation. Virtually no change occurred in percentage resolution in the conversation condition, which had already been high in the pre-program samples.

CHAPTER 8 • DISCUSSION

Four topics will be the focus of this discussion. First, the validity of the quantitative measures will be discussed. Second, the qualitative and quantitative results will be compared and integrated. Third, implications for clinical practice will be discussed. Finally, the limitations of the study will be summarized.

Quantitative Measures

The quantitative data suggest that some improvement had occurred for both couples in the efficiency of their interactions during structured activities. However, the size of the differences may be due to factors other than the treatment program. These factors will be discussed in this section. A comparison of the data for the structured activities across cases suggests that some activities may yield more breakdowns simply because of the nature of the activity. For example, the highest breakdown measures for both cases occurred for the third pre-program sample. This activity involved the PA dictating a return letter to a fictitious friend. In this case, the PA was given the information in the original fictitious letter and the SO hadn't seen the letter. Therefore, the set of potential messages to be sent by the PA was much less constrained than the other barrier activities. In addition, the SO had to record in writing what the PA wanted to say, so there was more need to resolve any breakdowns that occurred.

A primary consideration when choosing activities to stimulate interaction should be the degree to which the activity demands that the listener *demonstrate* that he has understood what the speaker said. A traditional barrier activity brings a high demand for listener understanding and a newspaper description activity has a low demand for listener understanding. In the latter activity, the listener's decision to consequate breakdowns is much more prominent. The listener can choose to simply nod his head, in effect, 'pretending' to understand even if he didn't because he is not required to demonstrate that he understands. Alternatively, the listener could also choose to respond to every message or even single word that didn't make sense to him. What are the factors influencing a listener's decision whether to consequate a breakdown? One can only speculate about the answers to this question. Fatigue, mood, awareness of breakdown, goal of the interaction, and the number of previous breakdowns in the interaction are some factors that come to mind. The most valid indication of change was the performance on the activity that was duplicated in pre- and post-program samples. Little change was evident for Paul and Joan on this activity except for a small increase in the percentage of breakdowns resolved. Significant change occurred for Bob and Sandra on the activity.

The quantitative results need to be viewed with caution because it had not been predetermined how different tasks may systematically vary in their induction of breakdown. It is possible that overall the post program activities were less demanding than the preprogram activities and therefore, that the differences seen in the results may have been an artifact of activity inequities. The activities that showed the highest breakdown percentage were those regarded as unnatural by Bob and Sandra and the most challenging as reported by Paul and Joan. The activity that resulted in the lowest breakdown percentage--the party planning activity in the final post-program sample--was considered the most natural. Clearly, many factors influence communication breakdown and resolution within an interaction. Variables related to each speaker, the task or nature of the interaction, and the relationship between the interactants must be considered when using communication breakdown as a measure of treatment outcome.

In summary, the positive program effect on performance in structured activities is weakened by two factors. First, the nature of the tasks determined the level of breakdown percentage to some extent. Second, Bob and Sandra felt that, although they enjoyed some of the activities, the activities reportedly did not represent their communication lives. The use of structured activities does offer one advantage over conversation. Structured activities can induce more breakdowns and therefore provide more opportunities to examine breakdown. In my view, the participants' descriptions of everyday communication activities should serve as a guide in designing the activities for eliciting interaction. In addition, conversation may not have been an ecologically valid communication situation for Bob and Sandra since they reported that they rarely talked for the sake of talking. I believe that observing interaction in structured activities would have been more valuable if the activities resembled communication situations in everyday life. The results of the repeated structured activity suggest that an improvement had occurred in breakdown measures for Bob and Sandra. It is possible that a practice effect was responsible for these results. Assuming that some real change had occurred, the greatest change was in the number of breakdowns. Bob and Sandra may have learned how to avoid breakdowns. Perhaps their recognition of the frustration between them the first time they completed the activity motivated them to avoid breakdowns in the second performance of the activity.

For Paul and Joan, the structured activities represented a challenge, but they did not suggest strongly whether or not the activities were representative of everyday communication for them. The results from the repeated structured activity showed virtually no change in breakdown measures for Paul and Joan. The results from the conversation condition showed an extremely large effect for the length of breakdowns. A large effect was seen for percentage breakdown as well. Therefore, little improvement was evident in Paul and Joan's communication efficiency during structured activities and great improvement was evident for conversation. Perhaps the added pressure of the structured activity was detrimental to Joan's performance. It could be that the demand resulted in Paul's communication behavior becoming more directive. They may have been able to implement the goal strategies better in a less demanding communication situation such as conversation. In other words, the behavior changes may not have been well enough established to be maintained in high pressure situations.

Integration of Qualitative and Quantitative Results

The qualitative and quantitative results represented data from two sources: objective measures of communication behavior and the impressions of the participants. How do the two sources compare in this study? For Bob and Sandra, who clearly felt no impact from the program, how can the improvement in breakdown percentage for the structured activity be reconciled with their perceptions of no effect? In other words, when the results contradict each other, which one is 'the truth'? I believe that the perceptions of the participants are the most important source of outcome information. However, in order to accept the participant perceptions as true when there is discord in results requires that the participants are reliable informants. I found no evidence in the statements of the participants to suggest that they were not representing their situation accurately. In the rare situations where a participant had contradicted themselves, I discussed the contradiction for clarification with the participants. Assuming that the objective data are 'the truth' when there is contradiction requires that the perceptions of the participants are ignored. Clearly, viewing discrepant results from this kind of framework results in a no-win situation. However, accepting both sources of data as right given that they are both satisfactorily reliable and trustworthy can lead to a more productive analysis. For Paul and Joan, the lack of improvement in the repeated structured activity indicated that their behavior had not changed in that way for that activity. It is possible that other communication behaviors had changed and were resulting in their increased satisfaction with communication. Perhaps other factors not related to the treatment brought about increased satisfaction with communication.

An example of agreement between objective measures and participant perceptions occurred in Paul and Joan's case. Paul felt that Joan was doing more of the talking in their interactions as a result of the program. I had hoped that by having Joan utilize alternatives in trying to get her message across, the breakdowns would be resolved more quickly. Paul would not have to proceed with a guessing sequence to help Joan get her message across. Joan would be able to provide information that narrowed it down at the very least for Paul to make more of an 'educated guess'. The results for length of breakdown in conversation indicated that there may well have been such an impact.

The objective measures could not provide any information regarding program impact outside the dyad. In Bob's case, he did not report anything about his communication with others. Therefore, I can not state one way or the other whether an impact had occurred. There was a significant impact on Joan's participation in activities in the community according to Paul and Joan. How is it that work within the dyad resulted in improvement outside the dyad? It is possible that the improvements in independence for Joan could have been a result of factors other than the treatment program. However, Paul and Joan consistently stated that it was the program that was responsible for the changes. The relationship between communicative confidence, opportunities for communication in the community and communication performance in the community is unclear. Holland explained the complexity in this way: "disordered language and communication breeds disordered psychosocial well-being, and disordered psychosocial well-being breeds disordered language and communication. Thus, treatment plans for adults with aphasia in natural settings need to reflect such interdependence" (1989, p.11). It would have been an informative addition to this project to measure communication behavior in the community.

Clinicians need to understand the relationship between the communication disability and everyday communication for every client that they serve. I believe that collecting data from different sources can be a valuable way to explore that relationship. Addressing the contradictions between two data sources can prompt many important questions for clinical practice.

Clinical Implications

Why was the program successful for one couple and not for the other? Overall, program success seemed to depend most on how well program processes and purposes matched with the needs of the participants. It was clear by the end of the program that a focus on dyad communication was not appropriate for Bob and Sandra. In Paul and Joan's case, the dyad was a good place to start for addressing Joan's communication needs outside the partnership. In addition to dyad needs, the nature of the communication disability was a factor in program success. Joan's struggles to communicate were closely related to the activities and the focus of the program. She and Paul reported that Joan is often in situations where she has information that she wants to get across or explain. Joan's comprehension abilities were relatively good compared with Bob's abilities. Bob's difficulties in communicating with others were less straightforward. He reported trouble understanding others: "if I could get people to talk the way I would like them to I would find it easier." He also expressed difficulty finding words. The program attempted to address Bob's need for others to alter their communication with him. The program may have been more successful in addressing that need if communication partners from the community, rather than Sandra, had been involved in the program.

The marital relationship was undoubtedly a factor in program success. Bob and Sandra's marital difficulties clouded their communication needs to some degree. In the post-program interview, Sandra hinted that the communication difficulties between them were a result of marriage troubles, rather than Bob's aphasia. They talked about arguments between them and they rarely seemed to do activities outside the home together. Paul and Joan's relationship was a comfortable and enjoyable basis that facilitated Joan's progress. The status of the marriage is of prime consideration when implementing a program such as this. However, clinicians need to look beyond judgments of the quality of the marriage. Information about how much time the couple spend together and the nature of their interactions is necessary for program planning. The selection of clients for a program like this one is extremely important. I would suggest that marital stability, relatively intact comprehension for the aphasic speaker, and expressed desire from both partners to work on communication within the dyad should be the minimum entrance criteria. However, when trying to implement this kind of program, clinicians need to be aware that clients satisfying these criteria who have a significant other may be difficult to locate. That was certainly the case in this project. This is a limitation of the current program.

Three major implications for clinical practice will be discussed in the remainder of this section. The first implication is that the program needed a more effective and efficient process to determine needs in the beginning so that a mismatch could be avoided. Observation in the natural setting is one avenue to determine needs. The task of describing human interaction is very complex. Nevertheless, it is a worthwhile pursuit for clinical aphasiologists. "Observation is a qualitatively productive means for knowing an aphasic person better. And knowing a patient, his cognitive style, his personal ability to adapt to his deficits, and the circumstances of his daily communicative life can increase a clinician's effectiveness, perhaps immeasurably" (Holland, 1982, p. 55).

However, careful observation is not enough. Clinicians must learn to define the interaction from the participants' point of view. Observation provides valuable information about the client's communication life, but the labels we attach to observation are inevitably our own. The participants with aphasia in this study had significant difficulty understanding my observations. The task of recognizing those behaviors in their own interactions was even more difficult. Andrews and Andrews (1990) described a model of family based assessment that provides some specific strategies for defining the problem from the family's point of view. For example, "tracking" is a technique "that is used to learn about patterns in which the communicative problem is embedded. Descriptive sequences of who says what and when can be developed, much like the script of a play" (Andrews & Andrews, 1990, p. 40). Clinicians need to have the opportunity to learn and hone these kinds of skills since they are rarely taught in training programs. According to Andrews and Andrews (1990), "leading families to describe their communicative attempts at home and to think about things that they have done to help their family member usually results in a new level of understanding from which new insights are gained" (p. 40).

I would suggest that the scope of the clinician's investigation into the communication problem needs to extend beyond the nuclear family, if necessary. In Paul and Joan's case, they spent most of their time together and so the immediate family was most appropriately the focus of intervention. However, in Bob and Sandra's case, the most prominent needs did not exist within the dyad or nuclear family. Here again, one addresses these differences by investigating carefully and listening to how the client and those around him define the problem. One way that Bob and Sandra could have been drawn in to the goal-setting process would be to show them the videotapes without having done any analysis myself and to develop goals based on their reactions to the videotapes. Sandra had had some insights into the communicative interactions. She noticed the interrupting and a need to "protect each other" during misunderstandings. Perhaps those insights could have been used as the basis for goal development.

The second major clinical implication relates to client direction. It is essential that any attempt at client-directed programming cannot include pre-determined notions about what is required and what will happen. The administrative arrangement of the program can not constrain program implementation. For example, if this program were truly client-directed, Sandra would not have been involved in the program for Bob. It became more clear toward the end of the program that Bob wanted to be able to communicate better with people outside of the dyad. In addition, Sandra reported positive benefits from Bob's contact with others. Paul and Joan had also expressed more needs outside the dyad than within it. Again, the program had been pre-determined to focus on the dyad when the greatest areas of need were identified outside the dyad. However, for Paul and Joan, work within the dyad appeared to impact Joan's performance in communication outside the dyad. In their case, the dyad was a good place to start because Joan had expressed the comfort and confidence that she felt in her ability to communicate with Paul and they enjoyed interacting with each other.

The third implication for clinical practice is that the metalinguistic and comprehension demands should be minimal for the participant with aphasia. The comprehension difficulties that occurred when I was explaining new activities were common to both Bob and Joan. The best strategy to address this difficulty was to have them learn about the activity by doing it. Explanations prior to the activity did not aid comprehension. Therefore, the prospect of involving the participant with aphasia in every step of the clinical process as it occurred in this program is not feasible. However, defining the difficulties using the participants' language may increase the likelihood that the participant with aphasia will be able to participate actively in the direction of the program. Better still, the context for interactions in a client-directed program needs to be the real context of everyday activities. Even a simulation of these activities did not seem to go far enough in this study. Lyon's (1992) 'Communication Partners' program addresses the importance of real context. Pachalska (1993) described a similar program implemented in Poland called 'therapeutic tours'. Clients, families, therapists, and others in the community participate in real-life activities. The aim of the program is to "remedy withdrawal from active community life" (Pachalska, 1993, p.160). In addition, "therapists can observe how each individual acts and communicates in real-life situations, which enables them to provide appropriate help with such interactions" (Pachalska, 1993, p.160). The program also includes group sessions with the therapist to plan communication strategies for upcoming tours or to discuss what occurred at a previous tour. Programs such as therapeutic tours and Communication Partners would provide a way to assess client needs in an ecological manner.

Future research is required to explore the relationship between communication behavior measures and client perceptions of communication success. Methods of eliciting interaction for measurement also require further investigation. In addition, data from normal communicators' behavior on communicative tasks would be very helpful. Perhaps most importantly, alternative clinical research strategies are needed to describe innovative approaches like that described by Pachalska (1993). Byng (1993) suggested that "we need to heighten our awareness of what is already happening in therapy, so that we can start to be explicit about what we are doing, why we are doing it, and how we think it should change the aphasic person's method and content of communication" (p. 128). By being explicit about what we think will happen in therapy we can better evaluate the influence of predictions on our interpretations of program impact. We are all facing the challenge to provide therapy that results in meaningful benefits in clients' everyday lives. It is plain that we need to learn more about 'aphasia at the kitchen table'. Equally as important is that we share what we have learned.

Limitations of the Study

The primary limitation of this study was the small number of participants involved. The contrasts between the two cases were informative, but the influence of personality and relationship variables on the outcome has been clear. Inclusion of more dyads would have strengthened the credibility of the findings. In addition, more data collection points would have allowed for long-term impact to be evaluated.

Secondly, the assumption that communication satisfaction was strongly related to communication breakdown measures was ungrounded. More research into the relationship between selected discourse measures and communication satisfaction needs to be completed. In addition, the structured activities may have differed systematically in the degree to which they create the potential for communication breakdown. The impact of type of task on discourse measures needs to be investigated.

Finally, the program needed to include a more purposeful needs interview to better match the program and the quantitative measures to the participants. If the quantitative measures had been ecologically valid, the comparison of quantitative and qualitative results would have been more meaningful.

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APPENDIX A

A Client-Directed Communication Program for Aphasic Speakers and Significant Others: Development and Outcomes

Participants' Information

The purpose of this study is to investigate the effectiveness of a communication training program for people with aphasia and the people they talk to the most (family or friends). The study will provide information that will be helpful for designing future aphasia treatment. Both the person with aphasia and his/her partner will be involved in the study from the beginning to the end. The study will be conducted by Sue Favell, a graduate student in the Department of Speech Pathology and Audiology at the University of Alberta, under the direction of Dr. Phyllis Schneider. The results of the study will be reported in a thesis as part of the requirements for a Master's degree.

Before the program begins, three sessions of videotaping will be completed. During each session, you will be asked to talk together during an activity and in general conversation. You will be videotaped for approximately 15 minutes in each session. The sessions will be completed in your home. Following the videotaping sessions, you will attend a treatment program together. The program is explained below.

The treatment program aims to help adults with aphasia and those in their environment adapt to changes in communication abilities. The program has two parts: an initial interview to determine goals together and individual sessions in your home.

Following the program, three sessions of videotaping your conversations together will be completed in the same way as before the program. You will also be interviewed to gain your feedback about the program.

If you have any questions about this study, please call me (Sue Favell) or Dr. Schneider at 492-5990.

Participant's Informed Consent (Person with aphasia)

I understand the information provided about this study. I understand that the results will be reported in a thesis paper and may be shared with other professionals. I may request a copy of the paper. I understand that my name will not be mentioned in any reports of the study.

I understand the I will be videotaped during conversations with my communication partner at a clinic and in our home. I will be videotaped three times before the therapy program and three times after the program. The videotaped samples will be analyzed by Sue Favell and an assistant. The videotapes will be kept confidential (they will be stored in a locked cabinet and they will be viewed only by people involved in the study). The personal information that I provide, such as address and telephone number, and the information that I provide during the interviews will be kept confidential. Any taped information will be used for research purposes only.

I will attend a communication program, which includes individual sessions with me and my partner in our home. These sessions will also be videotaped. The total time that will be required for the study will be approximately 12-14 hours over the course of 6 weeks.

If I am in speech therapy at the time of this study, Sue Favell will discuss the goals of my therapy with my Speech-Language Pathologist before I participate in the study. I also understand that I can choose to have Sue discuss the study results with my Speech-Language Pathologist after the study is completed.

I understand that I can ask questions about the study at any time and that I may withdraw from the study at any time without ill will and without any effect on **current or** future treatment or services. I understand that I will not be harmed in any way by participating and that my identity will be protected in all reports of this research. I consent to participate in this study.

______________________	______________________	Date: __________
Participant's name	Participant's signature	

______________________	______________________
Investigator's name	Investigator's signature (In my opinion, this person understands the expectations and demands involved in this study.)

Participant's Informed Consent (Communication partner)

I have read and I understand the information provided about this study. I understand that the results will be reported in a thesis paper and may be shared with other professionals. I may request a copy of the paper. I understand that my name will not be mentioned in any reports of the study.

I understand the I will be videotaped during conversations with my communication partner at a clinic and in our home. I will be videotaped three times before the therapy program and three times after the program. The videotaped samples will be analyzed by Sue Favell and an assistant. The videotapes will be kept confidential (they will be stored in a locked cabinet and they will be viewed only by people involved in the study). The personal information that I provide, such as address and telephone number, and the information that I provide during the interviews will be kept confidential. Any taped information will be used for research purposes only.

I will attend a communication program, which includes individual sessions with me and my partner in our home. The total time that will be required for the study will be approximately 12-14 hours over the course of 6 weeks.

I understand that I can ask questions about the study at any time and that I may withdraw from the study at any time without ill will and without any effect on current or future treatment or services. I understand that I will not be harmed in any way by participating and that my identity will be protected in all reports of this research. I consent to participate in this study.

____________________	____________________	Date: __________
Participant's name	Participant's signature	
____________________	____________________	
Investigator's name	Investigator's signature	

APPENDIX B
Interview Protocol

- Pre-amble: I'm going to ask you some questions about the program. This program has never been offered before. I wasn't sure if it would be effective or not and I don't want to continue offering this program if it is not helpful. I want to know what you think about the program.

Question Guide

1. Expectations

- Tell me about how you decided with (partner) to **enter** this program
- What did you **expect to do** in the program?
- What did you **expect to gain** from the program?
- Tell me about the things that you were **unsure about** when you started the program

2. Chronological description of the program and opinions and feelings about each part

- pre-program interview
- pre-program videotaping
- first session
- second session
- third session
- fourth session
- post-program videotaping

3. Opinions of the program as a whole

- Tell me about a **conversation** that you had with (partner) **before** the program started, **after** the program started
- How did **communication change** between you and (partner)
    - what happens when you have trouble getting your message across?
- [Have participants describe their performance on tapes on winter scene activity pre/post if time]
- Describe **one moment** that stands out for you that happened while you were in the program
- How did the program **match with the expectations** that you had before it began?
- Tell me what you thought about the **length, schedule, goals, and location** [home]
- What would you **change** about the program?
- What's the **ideal program** for you?

- **If I was a friend** of yours who had had a stroke, what would you tell me about the program?

Any other comments . . .

- Describe one moment that stands out for you that happened while you were in the program
- How did the program match with the expectations that you had before it began?
- What would you change about the program?
- If I was a friend of yours who had had a stroke, what would you tell me about the program?

APPENDIX C
Patter of Parallel Interaction--Bob and Sandra

(They are discussing Sandra's craft project)

SANDRA: Oh, I am makin' a plate for my granddaughter.
And it is driving me crazy, I'm gettin frustrated. <Um> .. I find my eyes are bad, an I find it very hard like I'm not seeing right.
BOB: What are you making exactly?
SANDRA: I'm making a baby plate for Laura.
BOB: Yes but exactly what is it?
SANDRA: Well it's uh a plate about that big an it's <got gold around the edge>.
BOB: <Oh pardon me I see> Ya, o'kay I know what that is <now>.
SANDRA: <And it> has, I haven't got that far yet. ... It is all white an to begin with you have to take a like a chisel an even it all off.
BOB: Ya
SANDRA: An then you have to um then you sand it, make it smooth.
BOB: Ya
SANDRA: An then you start painting it. An that's my problem, I don't like painting.
BOB: Ya but I first <heard>-
SANDRA: <Cause> I can't keep my hands steady enough.
BOB: Ya but I first head the voice there ... you were making something and I was thinking as uh ... is a dress of some kind I thought it at first or-
SANDRA: No it wouldn't have that much <???>.
BOB: <A sweater>, that's what I thought it was at thought.
SANDRA: Artistic I am not. That's for sure.
BOB: Ya
SANDRA: So I got ... the plate an I'm working on around the edges in gold.
BOB: Ya
SANDRA: An I'm starten to do the printing on it. It's the printing that's driving nuts.
BOB: What are you printen on?
SANDRA: Uh-
BOB: Happy Birthday?
SANDRA: No, no
BOB: No
SANDRA: Uh it's a boy. What the baby is an a boy and his name, and when he was born, the date of birth.
BOB: Hmm
SANDRA: And how much he weighed.
BOB: That's on the picture?
SANDRA: What's on the plate. It's all in the middle of the plate.

APPENDIX D

Content Analysis Categories

Knowledge/Familiarity: participants' knowledge of self, familiarity with settings
Demands: the demanding aspects of the program
Participant Suggestions: overt suggestions for program change made by the participants
Treatment Session Activities: comments about specific activities in treatment sessions
Self: self-critique, self-awareness, self-management
Conversation: comments about conversational activities in the program, the nature of conversation
Researcher's Role: activities of the researcher
Judgment: critique of own performance, the performance of others, judgments made by researcher
Samples: comments regarding the videotape samples
Others: interaction with others, importance of others, role of others in the dyad
Therapy: comments regarding previous speech/language intervention
Emotions: feelings expressed about the program or issues outside the program
Dyad: nature of relationship, roles within relationship, communciation within relationship
Outcome: direct comments about the impact of the program
Participation: decision to participate, degree of participation
Needs: particpant expression of what they need
Speech and Language: comments about eh speech and language ability of the PA
Purpose: purpose of activities within the program or components of the program
Pre-Program: comments regarding expectations of the program and events just prior to beginnig the program
Strategies: techniques used by the participants to improve communciation